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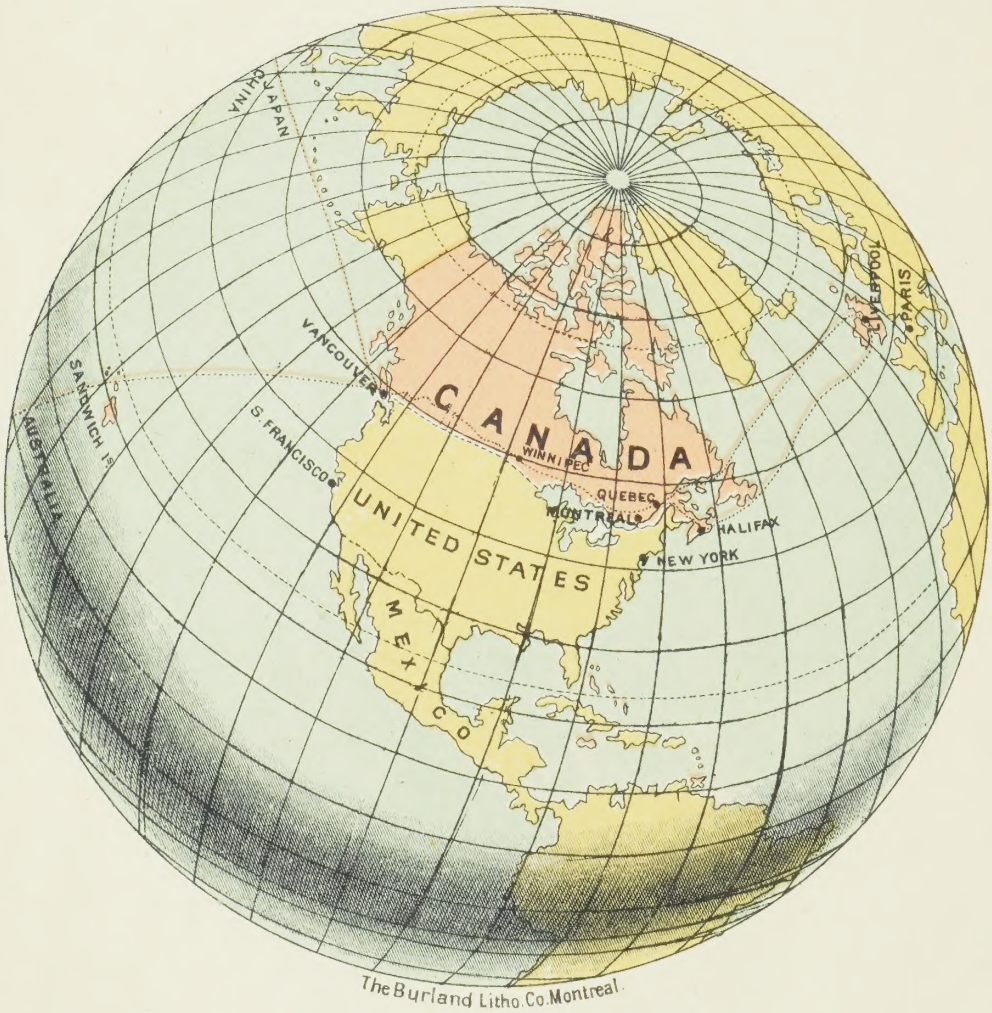

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CANADIAN HAND-BOOK.

COLONIAL AND INDIAN EXHIBITION,

LONDON, 1886.

CANADA:

ITS

HISTORY, PRODUCTIONS

AND

NATURAL RESOURCES.

PREPARED UNDER THE DIRECTION OF

HONOURABLE JOHN CARLING,

MINISTER OF AGRICULTURE, CANADA.

DEPARTMENT OF AGRICULTURE OF CANADA:
OTTAWA.

1886.

INTRODUCTION.

Canada presents herself in the great metropolis of the Empire in friendly rivalry with her sisters, who, with her and the Mother Isles, form that Greater Britain which Professor Seely has aptly described as "a World-Venice, with the sea for streets."

She aims at showing that her progress in arts, manufactures, commerce, wealth, education, government and general development is such as is rightly anticipated from every community sprung from the loins of Great Britain or influenced directly by the spirit of British enterprise.

In the Exhibition at South Kensington will be found those evidences of material advancement and prosperity which appeal to the eye.

The hand-book is intended to supplement the information given by the exhibits themselves.

The facts and figures gathered have been carefully revised and no pains have been spared to bring them down to the latest date and to make them as accurate as possible.

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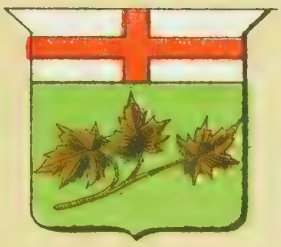
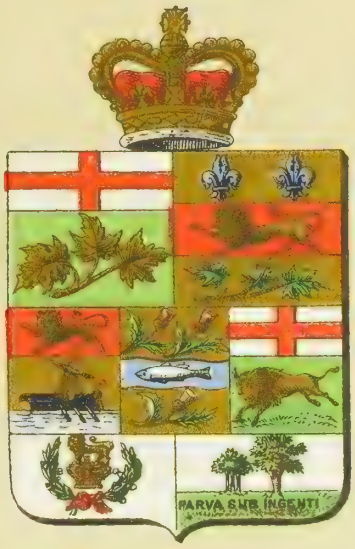


ONTARIO.

QUEBEC.



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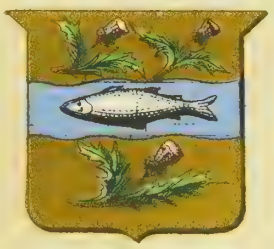

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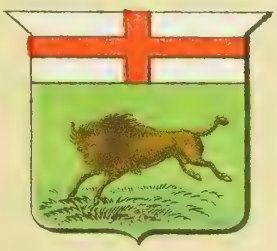
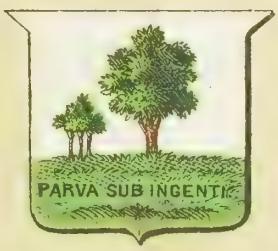


MANITOBA.



PRINCE EDWARD ISLAND.

BRITISH COLUMBIA.

LITH MORTIMER & CO OTTAWA

CANADA.

I.

CLIMATE.

The British Empire has an area, roughly speaking, of 9,000,000 square miles, of which one third is in North America, one third in the Antipodes, one sixth in the temperate zone of Europe and Asia, and one sixth within the tropics. If one portion of this great empire, enclosing within its ample bounds a fifth of the globe, has been decried because of its intense heat, and another on account of its aridity, Canada can claim to be the greatest sufferer of all from its association in the popular mind with intense cold; "Siberian" and "Canadian" having long been interchangeable terms to denote the utmost severity of cold. The furs which have been distributed throughout England for generations from many a Canadian stream, forest or plain, the possession of one side of the north pole, and the ownership of the snow-capped Rocky Mountains, have contributed to give Canada an Arctic name and a hyperborean reputation by no means in accordance with actual facts.

When the French monarch signed the treaty which transferred Canada to Great Britain, he sought to lessen the importance of his rival's acquisition and to diminish the degree of the sacrifice the French nation was called upon to make, by exclaiming, while he signed, "after all, it's only a few square miles of snow." In official circles the expression found acceptance, and down to a comparatively recent date the French King's estimate continued to be the belief of the best informed in Europe. Not very many years ago an eminent English statesman referred to Canada as "those huge ice-bound deserts of North America;" while the geographies of the schools and the encyclopedias of the libraries have invariably represented Canada as doomed in great part to eternal sterility from the severity of its climate.

The expeditions sent to the north pole have had much to do with the continuance of those strange misconceptions which have persistently retained their position among the "facts" relating to Canada's climate. According to Parry, the cold of Melville Island was so intense that hot water allowed to fall from the topmast reached the deck as hail; mercury could be fired as bullets from fowling pieces, and balls of frozen almond oil when fired at planks pierced them and fell to the ground unbroken.

Many other similar accounts have been published by veracious navigators respecting the Arctic slope of the Dominion, and these have been applied by a sweeping generalization to the whole country till intensity of cold has been burned into the average European mind as the most striking characteristic of Canada.

Agents of railway companies in the states and territories south of the international boundary line have striven to perpetuate the notion that the climate of Canada is against the country's future. Not long ago, the Canadian department of agriculture found that there had been distributed, throughout England, thousands of pamphlets in which it was asserted, with the proper quantum of hypocritical lamentation, that the climate of Manitoba consists of "seven months' Arctic winter and five months' cold weather;" the object in scattering the statement being to attract intending settlers from Manitoba to Dakota as possessing a better climate.

It can no more be denied that there are regions of Canada where the frost never leaves the ground, than it can be denied that there is a great American desert, stretching for several degrees of latitude between the Gulf of Mexico and the international boundary; but the Dominion of Canada is so vast in extent that one part may be charged with perpetual snow while another is bathed in almost perennial heat and sunshine. One part receives the cold atmosphere of the "Frozen Sea," another the humid air of the Atlantic, another the mild genial breezes of the Pacific, and still a fourth has the surface of its soil baked by the heat of tropical waters. In the extreme northern parts, vegetation is so stunted that the highest tree does not reach a child's knee; in the southern parts, vegetation is so luxurious, that fruits and flowers grow with as much vigor as in Italy or the south of France.

Between these great extremes, all the cereals, grasses and flowers of temperate regions are found, and as we proceed northwards or southwards we meet an unbroken gradation of vegetation. This country has, in fact, all the climates of Europe from the Mediterranean to the Arctic Ocean; as might be expected, seeing that it extends from the latitude of Rome, in Italy, to that of North Cape in Norway, and is of almost equal area.

Climate is an extremely complex matter and one that depends on a singular variety of conditions. Of these, the most manifest and inclusive are heat, rain, cloud, wind and electrical condition. They are, to a certain extent, dependent on each other, but ultimately they may be traced back to certain general causes, viz: 1st, position in latitude; 2nd, size and form of land; 3rd, elevation above the sea; 4th, form, position and elevation of neigh bouring land; 5th, nature and temperature of the nearest marine currents; 6th, position, distance and direction of the nearest continent.

These points have all to be fully studied, as much in dealing with the climate of Canada as in discussing that of any other country. It is clear that climate is not a question of latitude and longitude; that the South is not necessarily warm and the North, cold; that the East wind does not always bring rheumatism; that the South wind need not be hot, or the Southwest be accompanied by rain.

The very great differences in climate in England, comparatively small in extent as Great Britain is, should warn persons against forming one general conclusion as regards the climate of so vast a country as Canada. The climate of Bath and that of Torquay are well known to differ essentially, and even the two small islands of Jersey and Guernsey, not much more than twenty miles apart, are extremely different as regards climate.

One good result has come from the long-endured slandering of our Canadian climate; great attention has been given to meteorological investigations. The study of the science of climate has been stimulated by the determination of Canada to present *facts* in place of assertions and wanton aspersions. The Dominion Government has ten chief weather stations; 23 first-class stations reporting to the central offices by telegraph: 38 first-class, and 69 second-class stations. There are 38 storm signal stations, 12 stations at which self-registering sunshine records are maintained,

and 135 rain, snow and weather stations. In all, there are 292 places of observation reporting to the central office. These are distributed throughout the Dominion, 44 being on the Atlantic coast, 136 in the basin of the St. Lawrence, 105 between Rainy Lake and the Rockies, and 7 on the Pacific Ocean slope. In these the agents of the Canadian Government are engaged studying daily, and almost hourly, the climate of the country at stations as widely apart as the most easterly point of the southern shores of Hudson Straits, and Victoria in Vancouver Island. The records of the Hudson Bay forts have been searched for "weather notes." The narratives of travellers have been closely scanned for references to the climate.

From all these sources there is abundant evidence that Canada, climatically considered, is a country well fitted for Europeans.

Time has amply justified the conclusions of Malte Brun, "that Canada and the other British possessions in North America (now forming the Dominion), though apparently blessed with fewer physical advantages than the States to the south, contain a noble race, and are evidently reserved for a lofty destination. Everything there is in proper keeping for the development of the combined physical and mental energies of man. There are to be found at once the hardihood of character which conquers difficulties, the climate which stimulates exertion, and the natural advantages which reward enterprise. Nature has marked out this country for exalted destinies."

No one particular in her category of advantages is more effective as an instrument to enable Canada to take the position thus declared, by an eminent authority, to be her's in the future, than her climate.

Taking the conditions referred to as the true guides to climate, we find that a large portion of Canada is in latitudes which in Europe have proved the most favorable to the health of man. The mean temperature of the regions watered by the Moose and Abbitibi Rivers corresponds with the north of Europe, being 65° F. The regions drained by the northern part of the Ottawa and by the Saguenay, and the northern parts of Nova Scotia correspond with the south coast of England, Paris, the middle of Germany, and the south of Russia, being 60° F., while 65° F. represents the summer temperature of the regions bordering upon the Upper St. Lawrence Lakes, London, Toronto,

Kingston, Montreal, the St. Lawrence to Quebec, and eastwards to Fredericton, the capital of the province of New Brunswick.

Altitude more than latitude makes climate, and in this respect Canada occupies a position superior to most regions. According to Humboldt, Europe has a mean elevation of 671 feet, South America of 1,132, Asia of 1,151, and North America of 748 feet. The Canadian part of North America is placed at 300 feet.

The ascent from the ocean to Lake Superior does not average more that six inches in a mile, and even this ascent is not markedly noticeable till we proceed westward. Montreal, the head of ocean navigation, reached only after passing over several hundred miles of fresh surface water, is at low water but eighteen feet above the level of the sea, as it rolls under the lighter fresh water along the bed of its estuary.

The marine currents are singularly favourable to Canada. Along the Atlantic coast, the Gulf Stream exerts its benign influences to such an extent that on Sable Island there are troops of wild ponies, the progenitors of which, two centuries ago, were shipwrecked and cast upon the island, and there, successive generations, without shelter of any kind, have lived and multiplied. In Halifax, in the depth of winter, a dozen hours of south wind will mow down the snow-banks, as a mowing machine cuts down the ripened grass.

Along the Canadian littoral of the Pacific Ocean the Japanese current produces the same effect on the climate as the Gulf Stream does in England. Vancouver Island is like the south of England, except that it has a greater summer heat with less humidity. In the vicinity of Victoria the highest temperature in the shade in July and August ranges from 80 to 90° F., while the thermometer in winter, seldom goes as low as 22° below freezing point. As respects the ocean currents it may be said that they make a difference in the regions affected by them of 10° of latitude.

East of the Rockies, Professor Macoun found a large area which had been previously described by travellers as the apex of the great American desert. He concluded after investigation that this region was not naturally sterile soil, but a dried and baked surface caused by influences operating for ages, the chief of which was the heat of the Gulf of Mexico borne by the winds therefrom, and losing their moisture while passing over the

heated sand plains lying between the Gulf and Canada. Acting upon his conclusion he made an experiment, subsequently tried on a large scale by the managers of the Canadian Pacific Railway. The ground was broken up, and beneath the hardened surface was found a soil possessing in the highest degree the constituent elements of the best soil. It had been hermetically sealed, and thus prevented from wasting its sweetness on the desert air. The same influence, having its source in the Gulf of Mexico, combined, according to some observers, with the Chinook winds, operates upon the climate of that region—the ranching ground of Canada. In the district of Alberta, the winter climate is comparatively mild, not severe ; blizzards are unknown, and stock winter in the open air and come out fat and in good condition in the spring. The Government statistics show that there are now fifty-one ranches in which stock has been placed ; that they vary in size from 1,500 to 100,000 acres and have a combined area of 1,693,-670 acres. The number of cattle on them is 46,900, of horses, 4,310, of sheep, 9,694, of other animals, 895. Besides these, there are considerable numbers of cattle on grounds not held as ranches by lease from the government. The reports from all are favourable as to the future, speaking well for the climate in mid-winter.

The great bodies of water which are a distinguishing feature of Canada also exert considerable influence upon the climate.

Hudson's Bay is 1,000 miles long by 600 wide. Its temperature is 65° F. during summer; in winter, it is 3° warmer than the waters of Lake Superior. The chain of fresh water lakes, which, almost without a break, extends between latitude 44·45 and latitude 51 north, and from longitude 75 to longitude 120, covers, together with the smaller lakes, an area of 130,000 square miles and contains nearly one half of all the fresh water on the surface of the globe. The moderating influences of these large bodies of water, which never freeze over, will be at once recognized.

In the older settled portions of Canada the undoubted experience is, that the climate has been modified by the decrease of the forest area and the draining of swamp lands. Malte Brun says " the same changes, as to climate, are taking place in Canada which were observed in Europe when the dark masses of the Hercynian forest were felled and its morasses drained by the laborious arms of the Germans, and the climate, becoming more

mild, has undergone a change of 8° to 10° on the average, since the efforts of European industry were first applied to the cultivation of the country."

The number of centenarians, especially among the Canadians of French descent, whose ancestors for ten generations have lived and died in Canada, attests the suitability of the climate to the European races; as also do the facts that the weight of children at birth, and the size at twenty-one years, are far above the average of Europeans.

During the insurrectionary movement in the Canadian Northwest, in March 1885, men and boys were marched from the Niagara peninsula, and from all the cities between London and Halifax, without any special selection. Five thousand troops, with another thousand employees of various kinds, travelled in open box-cars over the Canadian Pacific Railway, marched across the "gaps" in the then incompleted railway, and trudged through snow and slush by forced marches northwards from three points on the railway hundreds of miles distant from each other. They slept in tents, without taking any extraordinary precaution as regards health. Yet of the six thousand, during months exposed and going as far north as the 53rd parallel, not one man died from any disease traceable to the climate. There was complete immunity from disease.

But, says some one, "while this is all true as regards the effect of the climate on human life, is it not a fact that vegetable life suffers? Is it not a fact that throughout the whole of Canada, while the mean temperature is equal to that of Europe, there are summer frosts which seriously diminish the chances of success for agricultural operations?

This question has also been made the subject of careful investigation.

Sir George Simpson says the vine is abundant on the Kaministiquia River, a tributary of Lake Superior from the north west, where also the tomato has been found growing wild. He also states that, in his day, buffaloes roamed in countless herds in the region watered by the Saskatchewan. "The grass to feed them," says Sir George, "is rich and abundant, and the buffaloes winter there, together with the domestic animals taken thither for the use of the white man and the Indian."

Professor Macoun found the cucumber ripening in the Peace

River district in August. In the valley of the Ottawa the grape flourishes, and the census returns show that the yield of grapes in Ontario for the year 1880 was 3,896,508 pounds. If you look through the exhibits from Canada, you will find apples, pears, peaches, and other fruit, which suggest a fine climate, better for such fruit than that possessed by any other part of "Greater Britain," and, if the price paid for Canadian apples in the London market is good evidence, better than any part of the United States.

There is, beyond question, one drawback which, in the North-western territories of Canada, though not to so great a degree as in the Western States to the South, makes the mean temperature of the summer lower than it would otherwise be, and at the same time destroys, to a certain extent, the accuracy of the deductions made from that mean temperature. That drawback is the occurrence in occasional years of a summer frost. Upon the fact of this occurrence, interested persons have commented on the climate for wheat raising. The experience of the early settlers in Ontario was similar to that of the early settlers in Manitoba. We never hear now of this as an objection to Ontario. Already in the Prairie Province early planting has to a very considerable extent overcome the objection, as the wheat reaches in such event a period in its growth which enables it to withstand the sudden lowering of the temperature. The hard Fyfe wheat has been the most successful seed, and it appears to be settled beyond question that if the seed had, in the first place, been obtained direct from Scotland, instead of from Ontario where it had been used for years and had probably undergone some changes in its properties, the success would be all that could be desired. The introduction of Northern Russia wheat has been suggested. At any rate, with a splendid soil—an alluvial black loam with an average depth of twenty inches, resting on a sub-soil of clay, —with an average yield of twenty-eight bushels to the acre, and with practically eight days in the week, owing to the length of time the sun is above the horizon in those higher latitudes, it may be counted a certainty that the energy and enterprise of the people will ere long succeed in overcoming the one difficulty in the successful raising of wheat that has been experienced—a difficulty moreover which only in occasional years presents itself. The exhibits of Manitoba wheat will speak for themselves as to quality; the surplus of last harvest, equal to 5,500,000 of bushels,

will show to the people of the motherland that Canada is destined to take high place among the world's wheat growers, whose crops, gathered in various zones for the use of the inhabitants of the British Isles, supply the deficit of 130,000,000 of bushels experienced year by year in the island-home of the world-empire of Britain.

The following table gives the average summer and yearly temperature at stations in the Dominion of Canada, with the latitude, longitude and height above the sea. The temperatures are derived from ten years' observations, whenever practicable:—

ATLANTIC SLOPE.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Georgetown	46 11	62 35	100	61·2	40·9
Charlottetown	46 14	63 10	38	62·2	40·7
Kilmakumaig	46 48	64 2	20	61·2	39·2
Grand Manan	44 42	66 48		58·8	42·0
Point Lepreaux	45 4	66 27	45	55·5	39·5
St. Andrew's	45 5	67 4	36	60·1	41·2
St. John	45 17	66 3	150	58·4	40.3
Dorchester	45 55	64 32		58·2	38·6
Fredericton	45 57	66 38	59	62·1	39·7
Bass River	46 30	65 15	70	60·7	38·3
Chatham	47 3	65 29	50	61.3	38·4
Bathurst	47 39	65 42	35	63·2	39·6
Dalhousie	48 4	66 22	45	59·4	36·1
Yarmouth	43 50	66 2	61	58·5	42·8
Liverpoo	44 2	64 42	30	62·7	.....
Digby	44 38	65 46	150	60·8	43·8
Halifax	44 39	63 36	122	61·5	42·5
Windsor	44 59	64 6	87	62·2	42·7
Truro	45 22	63 18	77	60·4	40·8
Antigonish	45 38	61 59	.....	61·4	40·8
Port Hastings	45 39	61 24	.....	61·3	41·8
New Glasgow	45 41	62 39	.....	62·4	41·5
Pictou	45 42	62 41	.....	62·3	41·2
Baddeck	46 6	60 49	25	61·0	41·1
Sydney	46 8	60 10	28	60·3	41·1
Glace Bay	46 12	59 58	34	59·7	40·5
Guysborough	45 23	61 29	.....	61·6	40·6

The above are in the provinces of Prince Edward Island, Nova Scotia and New Brunswick.

St. Lawrence Basin.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Huntingdon	45 5	74 10	.....	63·6	41·1
Brome	45 12	72 34	.....	62·6	40·0
Richmond	45 40	72 12	437	61·9	39·8
Sherbrooke	45 35	72 10	.....	59·6	36·8
Danville	45 47	72 1	.....	61·8	39·4
St. Francis	46 13	70 48	.....	60·9	38·9
Cranbourne	46 22	70 37	.....	58·6	36.4
Montreal	46 31	73 33	187	65·5	42·1
Quebec	46 48	71 12	312	62·3	38·6
Chicoutimi	48 25	71 5	150	60·5	36·6
Father Point	48 31	72 1	20	54·7	35·0
Cape Magdalen	49 16	65 20	.....	56·1	34·8
Anticosti, S. W. P	49 24	63 36	20	54·7	34·6
Belle Isle	51 58	55 22	405	49·6	28·4
Cape Norman	51 38	55 54	.....	52·5	31 8
Cape Rosier	48 52	64 15	39	55·6	34·5

The above are stations in the province of Quebec.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Point Pelee	41 50	82 38	580	70·5	48·4
Windsor	42 19	83 2	599	69·0	48·2
Port Stanley	42 40	81 13	502	66·1	45·4
Stoney Creek	42 40	79 43	.....	65·1	45·3
Aylmer	42 45	81 0	.....	63·7	42·8
Glencoe	42 45	81 43	.....	65·7	44·3
Port Dover	42 47	80 13	635	66·1	45·4
Simcoe	42 50	80 21	700	66·7	46·2
Fort Erie	42 53	78 56	.....	65·8	45·4
Welland	42 59	79 17	580	65·8	45·4
Strathroy	42 59	81 42	.....	65·1	44·3
Sarnia	42 59	82 24	.....	63·5	43·4
London	43 00	81 15	816	66·0	45·2
Ingersoll	43 2	80 57	.....	64·1	42·8
Birnam	43 2	81 55	.....	63·6	42·4
Niagara S	43 6	80 6	.....	64·1	.....
Woodstock	43 8	80 47	980	64·3	43·8
Brantford	43 10	80 21	750	67·2	45·1
Granton	43 12	81 21	1015	63·6	43·6
Hamilton	43 16	79 53	350	68·2	47·0
Dundas	43 22	79 59	.....	66·5	45·7
St. George	43 23	80 17	.....	64·0	41·1

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet	°	°
Stratford	43 23	81 0	1182	63·9	43·1
Galt	43 23	80 29	870	64·8	44·2
Conestogo	43 33	80 31	.....	63·1	41·4
Guelph	43 33	80 16	.....	64·7	44·4
Gravenhurst	44 54	79 20	.....	62·7	41·0
Bancroft	45 1	77 50	.....	58·5	38·0
Cornwall	45 1	74 43	175	65.2	42·3
Beatrice	45 8	79 20	.....	60·9	39·1
Parry Sound	45 19	80 0	641	62·9	41·2
Renfrew	45 26	76 39	.....	61·6	.....
Huntsville	45 30	79 8	.....	61·8	37·0
Fitzroy Harbor	45 30	76 14	200	64·7	40·9
Ottawa	45 26	75 14	230	65·2	40·5
Spencedale	45 33	79 22	.....	60·5	35·2
Manitowaning	45 41	81 49	.....	62·5	42·5
L'Orignal	45 41	74 42	.....	62·4	40·3
Joly	45 42	79 10	.....	58·3	.....
Pembroke	45 50	77 7	389	64·6	41·0
Little Current	45 57	81 54	608	63·4	39·5
Rockliffe	46 12	77 55	418	61·9	38·6
Manamise	47 30	84 50	.....	56·8	35·5
Port Arthur	48 27	89 12	642	59·9	36·2
Kalmar	49 45	94 58	.....	62.0	34·7
Moose Factory	51 16	80 56	30	57·8	30·6
Marten's Falls	51 30	86 30	.....	55·1	25·9
Pickering	43 39	78 56	.....	64·6	43·9
Toronto	43 39	79 23	350	65·1	44·5
Brampton	43 41	79 46	710	66·2	44·4
Elora	43 41	80 24	.....	61·0	41·0
Goderich	43 45	81 43	728	65·9	45·2
Thornhill	43 45	79 23	.....	61·5	42·8
Oshawa	48 53	78 52	.....	62·0	42·1
Mount Forest	43 58	80 44	1376	64·6	42·2
Egremont	44 0	80 5	.....	61·7	40·4
Newmarket	44 2	79 27	.....	63·1	42·2
Point Clark	44 5	81 41	587	64·2	44·0
Port Perry	44 6	78 56	.....	66·8	45·8
Trenton	44 8	77 29	.....	64·3	41·5
Durham	44 10	80 50	1450	61·3	39·4
Belleville	44 10	77 23	321	67·3	44·3
Desoronto	44 11	77 4	272	64·8	42·6
Kincardine	44 11	81 37	684	64·6	44·0
Kingston	44 14	76 29	307	66·5	44·2
Peterboro'	44 17	78 18	668	66.9	44·6
N, Gwillemburg	44 19	79 18	480	66·5	44·0
Norwood	44 22	77 59	639	63·9	43·4
Barrie	44 23	79 40	768	65·1	43·2
Lakefield	44 25	78 15	.....	63·3	41·7
Stayner	44 25	80 4	714	61·6	42·4
Saugeen	44 30	81 21	656	62·8	42·8
Owen Sound	44 30	80 55	.....	63·3	42·3
Brockville	44 35	75 42	273	64.9	41·8
Penetanguishene	44 45	79 56	725	63.4	41·9

The above are stations in the province of Ontario.

Prairie Region.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Emerson	49 1	97 13	784	61·5	40·7
Sourisford	49 8	101 0	.....	57·8	33·1
Oak Lake	49 45	100 35	1386	57·0	30·8
St. Boniface	49 50	97 6	.....	59·4	31·9
Brandon	49 50	99 50	.....	58·1	30·1
Winnipeg	49 55	97 7	758	60·8	32·9
Poplar Heights	50 4	97 47	.....	61·5	34·5
Stony Mountain	50 5	97 12	803	60·9	33·7
Rapid City	50 7	100 0	.....	62·2	34·3
Minnedosa	50 14	99 47	1710	56·4	29·5
Gimli	50 37	96 58	723	58·9	31·8
Russell	50 50	101 21	.....	54·7	28·9
Hillview	? ?	?	.....	58·0	.....

The above are stations in the province of Manitoba.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	
Fort Walsh	49 42	109 51	.....	56·0	.....
Fort McLeod	49 39	113 20	.....	62·1	36·1
Medicine Hat	50 5	110 30	2136	60·7	39·6
Regina	50 25	104 35	.....	56·5	27·6
Qu'Appelle	50 44	103 42	2115	54·8	30·0
Gleichen	50 50	112 55	.....	56·4	.....
Calgary	51 2	114 40	3389	53·4	.....
Parkland	51 15	103 20	.....	55·1	.....
Pheasant Forks	51 45	101 30	.....	53·3	.....
Swan River	51 52	101 57	.....	58·7	.....
Battleford	52 41	108 27	1620	60·0	35·7
Edmonton	53 35	113 30	2253	57·2	31·7
Stuart's Lake	54 11	124 4	1800	54·2	38·8
Fort Dunvegan	56 0	118 20	.....	52·3	28·8
Slave Lake	55 20	115 0	.....	54·6	.....
York Factory	57 0	92 26	55	51·9	20·2
Fort Chipewayan	58 43	111 19	.....	53·5	23·9
Fort Rae	62 40	115 10	.....	54·0	20·9

The above are stations in the N. W. Territories.

PACIFIC SLOPE.

Station.	Latitude.	Longitude	Elevation above Sea.	Mean Temperature.	
				Summer.	Year.
	° ′	° ′	Feet.	°	°
Esquimalt	48 26	123 27		57·3	48·8
Victoria	48 25	123 30		56·6	47·4
Ladner's Landing	49 6	123 4		57·9	45·9
New Westminster	49 12	122 53	33	60·6	48·1
Spence's Bridge	50 25	121 30	760	67·6	47·5
Lillooet	50 42	122 2		63·8	44·0

The above are stations in the province of British Columbia.

II.

THE EXTENT OF CANADA.

A recent decision of the Judicial Committee of the Privy Council partially settles the north-western boundary of Ontario, leaving still unsettled the limits of the provinces of Ontario and Quebec to the north. In the event of an arrangement carrying the bounds of these two provinces to James' Bay, the great Mediterranean sea of Hudson's Bay would become the centre around which cluster four of the inland provinces of Canada. Four others of the provinces, into which, for local government purposes, Continental British North America is divided, are also maritime, viz., Nova Scotia, New Brunswick and Prince Edward Island on the east or Atlantic coast of Canada, and British Columbia on the west or Pacific coast.

Thus of the eleven provinces and provisional provinces into which Canada is divided, Manitoba, Alberta, and Saskatchewan alone would be without a seaboard.

The possession of Hudson's Bay and the apportionment of its coast among so many of the inland provinces give all parts of the Dominion one great interest in common—the maritime interest; bestowing on Canada at the same time greater homogeneity of interest with the rest of the British Empire than would at first thought seem to belong to her.

Hudson's Bay is connected with the North Atlantic Ocean by Hudson's Straits, which are 600 miles long by 50 wide, in the broadest part.

Canada stretches from this great centre in every direction. To the south and south-east there is the great WOODLAND REGION, comprising the provinces of Ontario, Quebec, New Brunswick, and Nova Scotia, in which, for a couple of centuries, the forests have been attacked by armies of Lumbermen hewing down the trees for export and home use, or clearing the ground for agricultural pursuits.

To the west and south-west lies the vast PRAIRIE COUNTRY, comprising Manitoba and the four provisional provinces of Keewatin, Alberta, Saskatchewan, and Athabasca.

To the north-west lies the Peace and Mackenzie Rivers district; while beyond the prairie region, still further west, is the MOUNTAIN REGION of Canada, embracing the Rockies, the Selkirk, and the Gold ranges of mountains.

From the 85th degree of longitude the country stretches west to the 130th degree; and east to the 42nd; 45 degrees on the one side, and 43 on the other.

North and south, the country stretches from the 51st degree of latitude, south to the 42nd, and north to the Frozen Sea.

Speaking generally, this country is divided into the basin of Hudson's Bay and those of the St. Lawrence, the Peace, the Mackenzie and the St. John Rivers, and the two slopes of the Atlantic and Pacific Oceans.

The basin of the Hudson Bay is the largest, being 2,000,000 square miles in extent. The St. Lawrence basin covers 530,000 square miles, of which 70,000 are in the United States. The Mackenzie basin has an area of 550,000 square miles. The St. John basin and the Atlantic slope together have an area of 50,214 square miles, and the Pacific slope one of 341,305 square miles.

Altogether, not including the area covered by the great lakes, there are 3,470,392 square miles, or about 40 per cent. of the area of the whole British Empire.

It is difficult to convey any adequate conception of the vastness of the country. England, Wales, and Scotland together form an area of 88,000 square miles. You could cut forty such areas out of Canada. New South Wales contains 309,175 square miles, and

is larger by 162 square miles than France, Continental Italy, and Sicily. Canada would make eleven countries the size of New South Wales. There are (in extent) three British India's in Canada, and still enough left over to make a Queensland and a Victoria. The German Empire could be carved out of Canada and fifteen more countries of the same size.

The plains of the Saskatchewan measure 500,000 square miles, and, according to Lord Selkirk, who attempted colonization, are capable of supporting thirty millions of people. A European area similarly situated east of the tenth degree of longitude would comprehend very nearly the whole of England and Ireland, part of the German Ocean, the English Channel, the north-eastern corner of France, the whole of Belgium and Holland, and the greater part of the valley of the Rhine.

The drainage system of Canada is on the same extensive scale as the country itself. The valley of the St. Lawrence penetrates the continent by a navigable route to a distance of about 2,000 miles from the ocean. The rivers which flow eastward into Hudson's Bay have their sources in the Rockies, 1,500 miles distant from their mouths. The northward flowing rivers have a length of 1,200 miles. The great lakes in the St. Lawrence form the largest and purest body of fresh water in the world, with an area of 90,000 square miles, a depth of from 200 to 1,000 feet, and with elevations varying from 200 to 600 feet above the ocean level. The following are statistics respecting these lakes:—

Lakes.	Length Miles.	Breadth Miles.	Depth. Feet.	Elevation. Feet.	Area in sq. miles.
Superior	420	170	1,000	600	31,500
Michigan	320	70	700	576	22,400
Huron	280	105	1,000	574	21,000
Erie	240	57	200	565	9,000
Ontario	180	55	600	235	5,400

The lake system of the prairie region is low in altitude, covers an area of over 13,000 square miles, and is as follows:—

Lakes.	Length.	Breadth.	Elevation.	Area, square miles.
Winnipeg	280	57	710	8,500
Manitoba	120	24	752	1,900
Cedar Lake			770	312
Dauphin			700	170
Winnipegosis	120	27	770	1,936

The four principal rivers of the eastern, northern, and western watersheds of Canada are:—

	Length in miles.	Drainage area in square miles.
St. Lawrence	1,500	330,000
Saskatchewan and Nelson	1,500	450,000
McKenzie	1,200	440,000
Fraser	450	30,000

III

HISTORICAL SKETCH OF CANADA.

There is so much that is unique in the history of Canada that the task of presenting an adequate conspectus of her past, within the narrow limits imposed, is far from being one easy of accomplishment. The most that can be done is to bring under review some of the leading incidents and personages, and to indicate, as far as possible, their influence in moulding her history and determining the course of events.

It has been well said that no part of England's world-wide colonial domain has passed through so many or such stormy stages of existence. Nowhere within the circuit of the Crown

territory have peace and war, union and disunion, loyalty and rebellion, followed each other in such quick succession. In none have the struggles between church and state, between party and party, been more bitter, or the great political changes which they have contributed to hasten been more sudden or more sweeping. Nowhere have the loyalty of the subject and the prestige of the nation been more sorely tried, and nowhere have they been more nobly vindicated, or more heroically sustained, than in Canada.

For the sake of greater clearness, it is best to divide the sketch of the history of Canada into periods; the first covering the discovery and exploration of the country, the second, its occupation and settlement by the French, and the third, its conquest and permanent possession, by the English.

1st Period. The Discovery and exploration of Canada.

There is an irreconcilable difference of opinion between the authorities as to the man who is rightfully entitled to claim the honour of first setting foot on Canadian soil. If the Norse Sagas can be accepted as reliable sources of history, one Leef Erikson,—who, in the year 1000, set forth on a daring quest southward, and after touching at "Hulluland" and "Markland" (by which it is asserted were meant Newfoundland and Nova Scotia) finally brought up at Vinland (Massachusetts)—was the first European to tread the American shore. But in spite of Professor Rafn and the old mill at Newport R I., the Norseman's title has been much discredited, and the honour his patriotic countrymen would confer upon him is by other investigators transferred to one among that brave band of Portuguese navigators whose fearless enterprise revealed not one, but two, New Worlds to the Old World of the fifteenth century. According to the authorities, while Diaz and Vasco di Gama were seeking a new route to India *via* the Cape of Good Hope, or rather the Cape of Storms as it was then called, John and Sebastian Cabot, father and son, a dauntless pair of sea-dogs, with a commission from Henry VII of England, were speeding across the unknown Atlantic, in full faith of finding a north-west passage, which would lead them by a directer route to the same golden goal, and it would seem as if the same year, 1497, beheld the discovery of England's present domain in South Africa and in North America.

The Cabots at that time ventured no farther than Newfoundland and Labrador, of which they took possession in the name of England, but the following year, Sebastian, the younger, having the same purpose in view, sailed as far north as Hudson's Straits; and then, being barred by icebergs, turned southward, and skirted the coast down to Chesapeake Bay, landing at several places, and partially exploring the fertile country he had thus discovered. It was upon these discoveries that Great Britain founded the claim, she afterwards so successfully asserted, to the greater part of North America.

In 1499 Jaspard Cortereal, a rival of Cabot, essayed to follow in his footsteps, and with two ships furnished him by the Portuguese government, reached the Labrador coast, and is generally credited with having given that region a title "Terra Laborador" (land which may be cultivated), that has been abbreviated into its present appellation. He also entered the gulf of St Lawrence, and explored it to same extent, but of the result of his investigations no record remains.

Two other explorers of this great gulf were Denys and Aubert, two French navigators, who made their way there in the year 1506 and 1508 respectively.

Meantime, the rich fisheries of the Newfoundland banks, whose treasures are practically inexhaustible, were being drawn upon for the first time by the hardy Breton, Basque and Norman fishermen, of whose visits the name Cape Breton, found upon the earliest maps, furnishes an interesting memorial.

None of the voyages thus taken, however, had any reference to the settlement of the country. It was reserved for France to make the first attempt in this direction, when, in the year 1518, the Baron de Lery fitted out an expedition with that end in view. Unfortunately the fates were not propitious to this venture, and beyond the landing of some horses on Sable Island, where they multiplied remarkably and exist in droves to the present day, nothing was accomplished.

France had as yet done little in exploring or occupying any portion of this boundless continent, whose wealth was filling the coffers of her rivals, and Francis I resolved to claim a share of the prize. "Shall the Kings of Spain and Portugal," he exclaimed, "divide an America between them? I would like to see the clause in Father Adam's will bequeathing that vast inherit-

ance to them. Under his direction, therefore, in 1524, Verrazzani, a Florentine, was sent forth. He ranged the coast from Florida to 50° north latitude and with superb assurance annexed on behalf of France the entire region previously explored by the Cabots, designating it "New France." The rival claims arising from these explorations were the chief grounds of the long and bloody conflict which later on was waged between Great Britain and France for the possession of this magnificent region beyond the seas, and the maritime supremacy that went with it.

Thus fitfully and feebly were the first attempts to found settlements on the North American coast carried on up to the close of the first quarter of the sixteenth century, and, as we have seen, without anything practical or permanent being achieved.

2ND PERIOD. OCCUPATION AND SETTLEMENT BY THE FRENCH.

In the year 1534 when France had somewhat rallied from the disaster inflicted upon her during recent wars, fresh enterprises were undertaken in the New World, and on the 20th April of that year the real discoverer of Canada proper, Jacques Cartier, a native of St Malo, was sent out with two small vessels of about 60 tons each. Sailing through the Straits of Belle Isle he scanned the barren coast of Labrador, and almost circumnavigated Newfoundland. Turning thence southwest-ward, he passed the Magdalen Islands, and on a glorious July day entered the large bay, for which the intense heat suggested the name of "des Chaleurs" it bears to this day. On the rocky headland of Gaspe he landed and, erecting a huge cross bearing the *fleur-de-lis* of France, took possession of the country in the name of his sovereign Francis I.

Learning from the natives of the existence of a great river leading so far up into the interior that "no man had ever traced it to its source," he sailed up the gulf of St Lawrence until he could see land on either side. But the season being well advanced, he deemed it prudent to go no farther until he should return next summer.

Delighted with the report his faithful Lieutenants brought back, the French king, in the following year, fitted Cartier out with three fine vessels, of which the largest was 120 tons burthen, and despatched him with the special blessing of the bishop of St. Malo and with a commission from himself to "form settlements

in the country and open traffic with the native tribes." The little squadron reached the mouth of the St Lawrence about the middle of July, and the 10th of August being the festival of Saint Lawrence, Cartier gave the name of that saint to the small bay in which he then was, since when it has been extended to cover the entire gulf and river.

Continuing up the noble stream, he came, on September 7th, to a fertile, vine-clad island, which he named the Isle of Bacchus. It is now the Island of Orleans. Here Donnacona, the king of the Algonquin nation, made him a state visit, accompanied by no less than five hundred followers in twelve huge canoes; and seven days later, having made up his mind to winter in the country, Cartier anchored his fleet at the mouth of the St Charles river, where stood the Indian town of Stadacona, beneath the high beetling promontory now crowned with the historic ramparts of Quebec.

Impatient to explore the river stretching out so grandly before him, Cartier advanced with fifty men in his smallest vessel. But the sand-bars of Lake St Peter compelled him to take to his boats. In these he pressed onward, until on October 2nd he reached the populous Indian town of Hochelaga, nestling beneath the wood-crested height which with characteristic loyalty he called "Mont Roya'," since anglicized into Montreal. The friendly natives thronged the shore by hundreds, and received the pale-faced strangers with manifestations of the utmost delight, loading their boats with lavish presents of corn and fish. From his kindly hosts, Cartier learned of the existence, far to the west and south, of inland seas, broad lands and mighty rivers, then an almost unbroken solitude, now the home of a prosperous people.

After three days of pleasant intercourse, Cartier returned to Stadacona and wintered there, his little force suffering severely from insufficient food and inadequate clothing, being also plagued with scurvy of a malignant type, whose violence neither processions, vows nor litanies availed to stay. The following spring he returned to France, taking with him, much against their will, King Donnacona and nine of his chiefs as living trophies of his expedition.

Five years elapsed before Cartier returned to Canada, and this time he had with him the Sieur de Roberval whom the French Monarch had created Lieutenant-General and Viceroy of his newly

acquired possessions. The natives were at first friendly as before, but became hostile on learning that Donnacona and his companions had not returned; and Cartier's treachery began to recoil upon his own head. Another gloomy winter was spent, and again the would-be colonists went back home disheartened, although Roberval, who met them at Newfoundland, tried hard to retain them. Roberval continued on his course and wintered at Cape Rouge, whither, in 1543, Cartier was sent to carry the order for his recall, and the latter after enduring a third winter, left the country in the spring of 1544 never to return.

With the disastrous failure of all these early expeditions, the efforts of France to colonize Canada were suspended for a full half century, with the single exception of the Marquis de la Roche's quixotic attempt to settle Sable Island with a band of convicts selected from the Royal prisons—an attempt, it need hardly be said, that had no other result than to furnish historians with a highly romantic episode, and a spot on that "dark isle of mourning" with the name of the "French Gardens."

With the opening of the seventeenth century, there appears upon the scene one of the most remarkable of the many remarkable men who have taken an active part in moulding the destinies of Canada. This was Samuel de Champlain, whose high qualities both as sailor and soldier, marked him out as one peculiarly fitted for the task of opening up New France to civilization. Accordingly in 1603 he was commissioned, in conjunction with Pontgrave, for this arduous enterprise, and his first voyage, which produced nothing but a cargo of furs, was made in that year. Two years later, however, he returned in connection with a much larger expedition headed by the Sieur de Monts, who had obtained a patent of the vice-royalty of La Cadie or Acadie, now called Nova Scotia, and the first actual settlement by Europeans within the boundaries of the present Dominion of Canada was then (1605) made by de Monts at Port Royal (now Annapolis Royal) in Nova Scotia, and there the first field of wheat ever sown by the hand of white man in all Canada was sown—winter wheat it was, for Poutrincourt says "it grew under the snow." The little colony here established, after a fitful existence of several years, was finally destroyed by the English under Argall, the bitter strife between the French and English nations, which disturbed the continent for one

hundred and fifty years, there finding its beginning, and making, during its continuance, Port Royal famous as the most assaulted spot on this continent. It has been taken by force, five times by the English—by Argall in 1613, by Kirk in 1621, by Sedgwick in 1654, by Phipps in 1690 and by Nicholson in 1710. It was by them abandoned or restored to the French four times—by Argall in 1613, by treaty of St Germain in 1632, by treaty of Breda in 1667 and by treaty of Ryswick in 1697. It was unsuccessfully attacked by the English three times—by Church in 1694, by March in 1707, and by Wainwright also in 1707. It was unsuccessfully attacked by the French and Indians twice—in July 1744 by Abbe de Loutre, and in September 1744 by Duvivier. It was taken, sacked and abandoned twice, once by pirates in 1690 and once by United States, revolutionary forces in 1781.

Yet o'er this lovely spot, first chosen home
By either race beyond the Atlantic foam,
Have Gaul and Albion, for a century, warred
As pledge of Empire, victory's reward.
No other spot in all this western world
So oft hath seen the battle flag unfurled;
So often been the battering cannon's targe;
So oft the goal of headlong battle-charge;
So often heard the Indian war-whoop dread,
Or been by spoiler's ruthless hand bested;
So often borne in war's alternate chance
The flag of England and the flag of France.

Passing from Acadia to Canada proper, we find Champlain in 1608 once more ascending the broad St Lawrence, and on the 3rd of July, beneath the craggy heights of Quebec, laying the foundations of one of the most famous cities of the new world. The colonists soon were comfortably housed and the land cleared for tillage. Thenceforward, during many years, the history of Quebec was the history of Canada, and its annals contain little beyond the pathetic struggles of the colonists with the difficulties of their situation, and the dangers which constantly menaced them from their Indian foes. For the intense hostility of the Indians, the French were themselves wholly to blame. We have already seen with what ingratitude Cartier treated Donnacona, and now Champlain foolishly incurred the implacable hatred of the powerful Iroquois nation, by joining forces with the Algon-

quins in an attack upon one of their strongholds. The temporary advantage thereby gained was dearly paid for by a century and a half of rapine, plunder and nameless barbarities.

The Prince of Condé, Admiral Montmorency, and the Duke of Ventadour became successively viceroys of Canada, but the valour, fidelity and zeal of Champlain commanded the confidence of them all. Dauntless and tireless, he explored the St Lawrence and Ottawa Rivers, warred against the Indians, visited the mother country again and again in the interests of his beloved colony, strengthened the defences of Quebec; in fact was the heart and soul as well as the head of the entire enterprise. While he was Governor of Quebec, the little town was invested by Sir David Kirk, acting under instructions from the English court, and starved into an honourable surrender in the year 1629. But it turning out that peace had been concluded between the nations before the surrender, by the Treaty of St Germain signed in 1632, the whole of Canada, Cape Breton and Acadie was restored to the French. Three years later, Champlain's busy life drew to a close, and on Christmas day the noble soul whose character was more like that of knight-errant of mediæval romance than that of a practical soldier of the seventeenth century, passed peacefully away at the Castle of St Louis, which he himself had built upon the summit of the cliffs of Quebec.

Champlain had many successors in the arduous office of governor of New France, but none of like spirit, until Frontenac came in 1673, and the colony grew very slowly, scarce one hundred Europeans being added to it during the five years succeeding Champlain's death, while in 1662, when the charter of the Hundred Associates, a company which promised much and performed little, was annulled, the total foreign population did not exceed two thousand souls. The chief reason of this slow growth, as compared with the rapid advance made by the English colonies in Virginia and New England, was that, under Jesuit direction, far more interest was taken in the conversion of the savages than in the colonization of the country. From 1632 to 1682 priests of the Jesuit, Recollect and other orders, traversed the land, undaunted by trackless forests, terrible privations, merciless foes and appalling loneliness, pushing the work of the church wherever human beings were to be found and souls saved. The Jesuits were the pioneers of civilization in the far West. Their annual

reports, which have been collected and published by the Canadian Government in three large volumes entitled "Relations des Jesuits," constitute a perfect mine of priceless information on early Canadian history. Conspicuous among them were Pères Hennepin, Marquette, La Salle, Alloey, Dablon and Joliet, and many a priest heroically laid down his life rather than swerve aside, or turn back from the forward course he believed God had called him to pursue.

In the Spring of 1642 the foundations of Montreal, the future commercial metropolis of Canada, were laid by Montmagny with all the pious pomp and churchly ceremonial possible amidst such primitive surroundings, and thus onward into the heart of the country civilization slowly made its way, fighting with the relentless Indians for every foot of the passage.

In 1672 the Count de Frontenac was appointed governor and next to Champlain he is in every way the most conspicuous figure among the early holders of that office. The chief glory of his administration was the spirit of daring exploration and discovery by which it was characterized, the grandest achievement of all being the exploration of the Mississippi River and the Great West under Joliet, Marquette, La Salle and Hennepin. The sufferings of the colonies from the Indians, more especially the Iroquois, were terrible during this period, and at times it seemed as if they would really succeed in driving the detested "pale faces" from the country. Then in 1688 came the breaking out of war between France and England leading to hostilities between the French and New England colonies. These were carried on with varying success until the two nations came to terms again, and by the treaty of Ryswick (1697) restored to each other whatever conquests they had succeeded in making. The following year Frontenac died and was succeeded by De Callières.

After four years of peace, the war of the Spanish succession again involved England and France in bloody strife, which, of course, had to be shared by the colonies, and thenceforward until 1713 tragic scenes were enacted from the ocean-laved shores of Acadia to the pathless forests of the West, in which French, English and Indian warriors outvied one another in lust for blood.

By the Treaty of Utrecht (1713) the whole of Acadia, Newfoundland and Hudson's Bay were given to England, in whose possession they have ever since remained.

During the long period of peace that now ensued, the population of Canada, which by a census taken in 1721, was found to be only 25,600, slowly increased, and its internal development made considerable progress. The cultivation of the soil was, however, greatly neglected for the seductive fur trade, which possessed for the adventurous *voyageur* and *coureur de bois* a fascination that even its enormous profits did not wholly explain. Assuming the garb these often assumed the social habits of the red men, living in their wigwams, marrying their daughters, and rearing a dusky brood of children from whom have descended the Metis or Half-breeds which were last year brought into prominence through their rebellion in the North West.

In 1744, the war of the Austrian succession once more involved the colonies in a series of hostilities which were chiefly remarkable for the capture of the supposed impregnable fortress of Louisburg in Cape Breton by the English under Pepperell (1745), and the first appearance of George Washington, "the father of his country," who was then a valued officer in the army of the English colonies. The war terminated between the principals with the Treaty of Aix-la-Chappelle (1748), but this truce was regarded by both nations as only a breathing spell to prepare for the coming struggle that would decide the possession of the continent.

The year 1749 saw the foundation of Halifax, the capital of Nova Scotia, laid by Governor Cornwallis and the first muttering of the spirit of rebellion on the part of the Acadian colonists of the province that six years later rendered altogether unavoidable their complete expatriation—an event the true features of which, Longfellow has in his poem "Evangeline" obscured beneath a glamour of romance and pathos.

In 1754 the expected conflict opened with a brush between a small body of troops under Washington and a party of French soldiers under Jumonville at Fort de Quesne. Washington took the initiative, and, as Bancroft says, his command to 'fire' "kindled the world into a flame." It precipitated the tremendous struggle which, fought out to the bitter end on the plains of India, on the waters of the Mediterranean and the Spanish main, on the gold coast of Africa, on the ramparts of Louisburg, on the heights of Quebec and in the valley of the Ohio, resulted in the utter defeat of the French and the destruction of their sovereignty on

the American continent, and prepared the way for two important events; the independence of the United States, and the foundation of the unique Empire which, unlike Russia and the United States, "equally vast but not continuous, with the ocean flowing through it in every direction, lies, like a World-Venice, with the sea for streets,—Greater Britain."

The fluctuating fortunes of that fearful conflict, as the tide of war ebbed and flowed over the plains, down the rivers and through the forests of New France, New England, and the West and South, we cannot follow. It is known in history as the seven years' war, lasting as it did from 1755 to 1763 and being concluded by the Treaty of Paris in the latter year. During its continuance, many battles and sieges of great interest and importance took place, and many leaders won undying fame for themselves by their splendid achievements, but transcending all other events in magnitude and far-reaching consequence and towering high above all other men in the imperishable glory of their deeds, the siege of Quebec, and the rival commanders Wolfe and Montcalm, seem by their vastness to fill the whole picture as one looks back upon it from these present days. On the 13th September 1759, Wolfe won Quebec on the fields of Abraham and just one year later the capitulation of de Vaudreuil at Montreal before the combined armies of Amherst, Haviland and Murray completed the English conquest of Canada, and the entire continent, with the sole exception of the little rock-bound and fog-capped islands of St Pierre and Miquelon on the Newfoundland coast, passed forever out of of the possession of the French throne. This brings us to our third period, viz.—

3rd; Conquest and Permanent Possession by the English.

Of the conquest we have already spoken at the close of the preceding period; it now remains to glance at the history of Canada since it has been a British possession. Dr Withrow, in his admirable History of Canada, thus eloquently summarizes the improvement wrought in Canada by its change of masters; "The conquest of Canada by the British was the most fortunate event in its history. It supplanted the institutions of the Middle Ages by those of modern civilization. It gave local self-government for abject submission to a foreign power and a corrupt court.

It gave the protection of the *Habeas Corpus* and trial by jury, instead of the oppressive tribunals of feudalism. For ignorance and repression, it gave cheap schools and a free press. It removed the arbitrary shackles from trade and abolished its unjust monopolies. It enfranchised the serfs of the soil and restricted the excessive power of the *seigneurs*. It gave an immeasurably ampler liberty to the people and a loftier impulse to progress than was before known. It banished the greedy cormorants who grew rich by the official plunder of the poor. The waste and ruin of a prolonged and cruel war were succeeded by the reign of peace and prosperity; and the pinchings of famine, by the rejoicings of abundance. The *habitans* could now cultivate their long-neglected acres free from the molestation of Indian massacres or the fear of British invasion. Even the conquered colonists themselves soon recognized their improved condition under their generous conquerors."

The printing press was introduced into Canada a year after the Treaty of Paris was signed, that is in 1764, and the first printed matter published in Canada was the prospectus of the Quebec *Gazette*, a newspaper which continued in existence till 10 years ago.

While there was, as a matter of course, a good deal of friction between "the new subjects," as the French were called, and the British settlers or "old subjects," under the temperate and judicious guidance of General Murray and Sir Guy Carleton matters proceeded hopefully and the country entered upon a career of prosperity, rapidly increasing in population and wealth.

In the year 1774, what was known as the Quebec Act was passed by the British Parliament. It extended the bounds of the Province from Labrador to the Mississippi, from the Ohio to the watershed of Hudson's Bay. It established the right of the French to the observance of the Roman Catholic religion without civil disability, and confirmed the tithes to the clergy, exempting, however, all Protestants from their payment. It restored the French civil code and established the English administration of law in criminal cases. Supreme authority was vested in the Governor and a Council of from 17 to 23 members, the latter being nominated by the Crown and consisting for the most part of persons of British birth.

This Act gave profound dissatisfaction, not only to the English-speaking minority in Canada, who considered that their rights

had been ruthlessly sacrificed, but also to the American colonists, who complained bitterly at the transfer to Canada of the country north and west of the Ohio river, for which they had so long and variously struggled. Despite all protests and appeals, the Act, which naturally gave great delight to the French population, continued to be the rule of government of the province for seventeen years.

The colonists were now called upon to pass through another war-period—bloody but brief—and this time with their own countrymen across the border. In the year following the passing of the Quebec Act, the long smouldering fires of secession in the American colonies burst into flame. On April 19th 1775 the "minute men" of Concord and Lexington 'fired the shot heard round the world,' and the War of Independence began, which ended in the loss to England of her "American" colonies. One of the first steps taken by the Secessionists was to capture Ticonderaga and Crown Point on Lake Champlain, and thus possess the gateway to Canada. Forts St John and Chambly soon followed and on the 12th November Montreal succumbed, but the tide turned, when, flushed with their first successes, the Americans essayed the capture of Quebec, two daring attempts resulting only in disastrous failure. On the 4th, July 1776, the "American" colonies declared their independence and the war closed on the 19th October, 1781, with the surrender of Lord Cornwallis at Yorktown, Virginia.

By the terms of the treaty of peace signed at Versailles September 3rd, 1783, Canada was despoiled of the magnificent region lying between the Mississippi and the Ohio, and was divided from the new nation designated "the United States of America" by the great lakes, the St Lawrence, the 49th parallel of N. latitude, and the highlands dividing the waters falling into the At antic from those emptying themselves into the St Lawrence and the St Croix Rivers.

Throughout all the secessionary movement, a considerable number of the American colonists had remained faithful to the Mother Country. At the close of the war it became painfully evident that there would be no peace for them within the boundaries of the United States. They found their property confiscated, their families ostracized, and even their lives menaced. In this emergency, the British Parliament came to their aid. A

sum exceeding three millions pounds sterling was voted for the assistance of these United Empire loyalists, as they were proud to call themselves; transport ships were provided for their conveyance to Canada and every possible arrangements made for their domiciliation in the sea-board provinces, and in what is now the province of Ontario. It is estimated that no less than 25,000 persons were thus induced to find refuge in the British colonies, where they proved of the utmost value in opening up and settling the country.

At that time (1784) the present province of Ontario was almost a wilderness. The entire European population is said to have been under 2,000, and these dwelt chiefly in the vicinity of the fortified posts on the St Lawrence, the Niagara and St. Clair rivers. On the other hand, the population of Lower Canada was about 120,000. In order therefore that the Western region might be developed, the Home Government offered generous grants of land to those who would settle there, besides assistance in the way of seed, stock and farming implements; under these inducements, the wilderness soon began to make way for smiling farms, thriving settlements and waving fields of grain.

In 1786, Lord Dorchester (of whom we have already heard as Sir Guy Carleton) became governor-general of British North America. The Canadian colonists now demanded the same constitutional privileges as were enjoyed in the maritime provinces, these latter having in 1784-85, been organized under special constitutional charters. The demand was met by the granting of the *Habeas Corpus* and of trial by jury in civil cases. But this did not content the Canadians, who asked also for an elective Legislative Assembly, and a larger measure of constitutional liberty. Accordingly in 1791 the Constitutional Bill was passed by the British government. It divided Canada into two provinces known as Upper and Lower Canada, or Canada West and Canada East. Each province received a separate Legislature, consisting of a Legislative Council, appointed by the Crown, a Legislative Assembly elected by the people, and a governor appointed by the Crown and responsible only to it The Assembly was elected for four years and in it was vested the power of raising a revenue for roads, bridges, schools and similar public services. A body which soon become obnoxious to the people was the Executive Council. It consisted of salaried officials

of the Crown and judges, who were the confidential advisers of the Governor, although not accountable for their acts either to him or to the Legislative Assembly. They generally held seats in the Legislative Council and virtually controlled the legislation by their predominant, yet irresponsible, influence.

The new constitution, as Fox had predicted, worked badly almost from the outset. The Legislative, and especially the Executive, Councils became objects of popular jealousy, and questions of both church and state soon began to divide the the people into parties and engender bitter political animosities.

The first Legislature of Lower Canada sat at Quebec in 1791, when that city contained about 7,000 inhabitants; and the first Legislature of Upper Canada, at Newark, the present town of Niagara, in 1792, where it continued to sit until 1797 when it removed to York (now Toronto) which city had been founded by governor Simcoe two years previously.

The progress of the country in trade and population, and the development of its resources were rapid. The tide of emigration steadily increased, the Irish troubles of '98, especially, leading many hardy settlers to seek new homes in the virgin wilds of Canada.

As the province increased in wealth and population the evils of a practically irresponsible government began to be felt. The Executive Council, composed of the governor and five of his nominees removable at his pleasure, gradually absorbed the whole administrative influence of the colony.

In the year 1812-14 the young auxiliary nation was called upon to undergo a severe ordeal through the United States declaring war against Great Britain, partly because of sympathy with France and partly through misunderstandings between the two governments. The United States naturally selected Canada as the first object of their attack. The position of the two countries was very unequal. Canada was totally unprepared for the conflict. She had less than 6,000 troops to defend 1500 miles of frontier. Her entire population was under 300,000, while that of the United States was eight millions. Despite this startling disparity, the Canadians, rallying as one man to the loyal support of their government, bore themselves so nobly throughout the two years' struggles which ensued, that when it ended the advantage lay clearly upon their side, and the victories of Queenston Heights and Chateauguay are to-day

pointed to with the same patriotic pride as the Englishman takes in Waterloo or the Frenchman in Austerlitz.

At the close of the war, the domestic dissensions, suspended while all attention was concentrated upon the defence of the country, broke out afresh. In both Upper and Lower Canada the people began to assert themselves against the rule of the Executive Councils, and the breach between the two branches of the Legislature grew wider every day. Conflicting claims as to revenue and other matters also sprang up between the two provinces, to obviate which their union was suggested so far back as 1822, but then withdrawn in consequence of the intense opposition manifested by the French population of Lower Canada. In Lower Canada, Louis J. Papineau, and in Upper Canada, William Lyon Mackenzie, came forward as the champions of popular rights and were after a time drawn into actual rebellion. The struggle for Responsible government, once entered upon, was never permitted to relax until at length, in 1840, acting upon the suggestions contained in the famous report of Lord Durham on the state of the Canadas, the Home Government determined upon the union of the two provinces and the acknowledgment in the new constitution of the principle of Responsible Government. Resolutions were passed by the Provincial Legislatures in favour of the scheme, and a bill based upon them passed the Imperial Parliament in 1840, and went into effect on the 6th Feby, 1841. On that day the provinces of Upper and Lower Canada were peacefully united under one administration, and responsible government was firmly established.

The Act of Union provided that there should be one Legislative Council and one Legislative Assembly in which each province should be equally represented. The Council was composed of twenty life members, appointed by the Crown; the Assembly, of eighty-four members elected by the people. The Executive Council or Cabinet comprised eight members and was responsible to the Legislature. It was presided over by the Governor-General who held his appointment from the Crown. The control of all public revenues was vested in the representatives of the people. In June 1841 the first united Parliament met at Kingston. Three years later the seat of government was changed to Montreal and on the destruction of the Parliament Buildings by

a mob in 1849 it went to Toronto. It was in the first session of the Legislature in Montreal that the present Premier, Sir John A. Macdonald, took his seat as a Legislator, and began that remarkable career which has associated his name with all the political and other developments Canada has experienced during more than forty years.

At that period, Upper and Lower Canada were on an equal footing as regards population, the lower province having 768,334, and the upper, 765,797. Nine years subsequently, after many experiments, all of which proved unsatisfactory, the burning question of the choice of a permanent capital was left to the Queen herself, and under her approval it was established at Ottawa, where it has since remained.

The history of Canada during the remaining years which preceded Confederation is altogether a history of political parties and may be passed over without going into details. Above all other questions of vital importance rose the question of Representation by Population. By the terms of the Act of Union each of the two provinces was allowed an equal number of Representetives in Parliament and so long as their population remained nearly equal, the arrangement worked satisfactorily enough. But of late years, Upper Canada had far outstripped her sister province in population and now naturally enough began to demand that the representation should be re-adjusted so as to bear a due proportion to the respective populations.

This demand the French province vigorously resisted and a crisis was precipitated which threatened the integrity of the union. No stable administration could be formed, and political affairs were at a dead lock. Happily, in this serious juncture, the scheme for a confederation of all the provinces in British North America presented itself as a solution of the existing difficulties.

During all the years since the Quebec Act of 1774 was passed, the French-speaking Canadians have displayed that loyalty to the British Crown which found its noblest illustration in the expression of Sir George Cartier that he was "an Englishman speaking the French language."

IV.

CONFEDERATION.

A short résumé of the march of this great measure towards its final consummation will not be without interest.

In 1808 Richard J. Uniacke introduced the question of Union of the British provinces in North America, before the Legislature of Nova Scotia.

In 1814, Chief Justice Sewell of Quebec proposed the union of the British North American colonies to Lord Bathurst as a plan for solving governmental difficulties then existing.

In 1822, John Beverley Robinson, Attorney-General for Upper Canada, drew up a plan for the confederation of British North America. In 1825, Mr. McCollogh, then publishing the *Montreal Free Press*, wrote strongly and often in favour of Federal Union, and in December, 1835, Robert Gourlay, writing in London, submitted a scheme of the same nature. In 1839, Lord Durham recommended a Confederation of the Provinces in a report to the British Government. In 1854, Hon. J. W. Johnston introduced a resolution in favour of union of the Provinces in the Nova Scotian Legislature. In 1857, Hon. J. W. Johnston and Hon. A. G. Archibald went to England as delegates from the Nova Scotia Legislature on the question. In 1857, Hon. A. T. Galt spoke in favour of Confederation in the Canadian Legislature. In the same year, when Hon. G. E. Cartier, Hon. John Rose and Hon. A. T. Galt were in England on Intercolonial matters, they talked over Confederation with the Colonial Secretary, Sir Bulwer Lytton, who asked for a public expression of opinion from the Canadians.

The first Legislative step towards a Federal Union was made by the Parliament of Nova Scotia in 1861 by the unanimous vote of the Legislative Assembly, which was favourably received by the Secretary of State for the Colonies in a despatch of the 6th of July, 1862.

On the 14th of June, 1864, Hon. George Brown, as chairman

of a select committee of the Canadian Legislature, reported in favour of a federative system applied either to Canada alone or to the whole of the British North American provinces.

On Sept. 1st, delegates from the governments of Nova Scotia, New Brunswick and Prince Edward Island met at Charlottetown to discuss Maritime Union. While discussion was going on, delegates from the Province of Canada asked permission to attend, which was granted, and the larger union was proposed on the 12th of September.

On the 10th of Oct., 1864, delegates from the Provinces of Canada, Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland met at Quebec, and, during seventeen days' session, framed the basis of Confederation in a series of resolutions.

On the 3rd of February, 1865, the Canadian Parliament met at Quebec and the resolutions of the Quebec Conference were submitted by Hon. E. P. Taché in Legislative Council, and by Hon. John A. Macdonald in the House of Assembly. The motion of approval was carried by ninety-one to thirty three.

On the 24th of April, 1865, New Brunswick having returned a Legislative Assembly opposed to Confederation, Hon. Charles Tupper in the Nova Scotian Assembly moved that negotiations for the Union of Nova Scotia, New Brunswick and Prince Edward Island should be renewed. The Motion carried.

On the 17th of April, 1866, Hon. Charles Tupper moved in the Assembly of Nova Scotia that the Lieut.-Governor be authorised to appoint delegates to arrange with the Imperial Government a scheme of Union effectively ensuring just provision for the rights and interests of Nova Scotia. This was carried by thirty-one to nineteen. On the 30th of June, 1866, a similar resolution was moved in the New Brunswick Legislature and carried by thirty-one to eight.

On the 4th of December, 1866, the deputations from the Provinces of Canada, New Brunswick and Nova Scotia duly organized in London, the Hon. John A. Macdonald in the chair, and subsequently held interviews with Her Majesty's legal officers, beginning on the 24th of January, 1867.

On 29th of March, 1867, the Union Act was finally enacted by the Imperial Parliament.

On the 22nd of May a Royal Proclamation issued at Windsor Castle.

On the 1st of July, 1867, the Union was proclaimed throughout the four provinces, which became the Dominion of Canada.

On the 23rd of June, 1870, Rupert's Land and the North-western Territory were added to the Dominion by Imperial order-in-council, passed upon an address from the Canadian Houses of Parliament; the money payment to the Hudson Bay Company for their interest being fixed at £300,000.

On the 15th of July, 1870, Manitoba was created a province of the Dominion.

On the 20th of July, 1871, British Columbia was admitted into the Union.

On the 1st July, 1872, Prince Edward Island was admitted a province of the Dominion of Canada.

V.

THE CONSTITUTION OF CANADA.

The constitution of Canada is set forth in the British North America Act, 1867, 30 Vic. Cap. 3.

The executive government and authority is vested in the Queen of Great Britain and Ireland, who governs through the person of a Governor General, appointed by her, but paid by Canada.

By the adoption of this plan, the Canadian Constitution has become the very image and reflection of parliamentary government in England. The Governor, like the Sovereign whom he represents, holds himself aloof from and superior to parties, and governs through constitutional advisers, who have acquired ascendancy in the Commons.

A council, known as the Queen's Privy Council for Canada, taken only from members of the Dominion Parliament, forms a ministry which must possess the confidence of the majority in the House of Commons. The power of dismissing the ministry lies with the Governor-General.

The command of the Canadian military, both active and reserve, is vested in the Queen, who appoints an officer of the British army of not less rank than a Major-General, who is paid by Canada. The seat of Government is at Ottawa.

There is one parliament for Canada, consisting of the Queen, an Upper House styled the Senate, and a Lower House styled the House of Commons.

The Senate consists of seventy-eight members, appointed for life by the Governor in Council; twenty-four from Ontario, twenty-four from Quebec, ten from Nova Scotia, ten from New Brunswick, three from British Columbia, four from Prince Edward Island, and three from Manitoba. Each senator must be not less than thirty years of age, a born or naturalized subject, and possessed of property in his own province, real or personal, of the value of $4,000. He must continue to be resident within the province for which he is appointed.

The House of Commons consists of 211 members, elected for five years, (unless the House is sooner dissolved) on the basis of representation by population for the older provinces, the arrangement being that the Province of Quebec shall always have sixty-five members, and the other provinces proportionately to population according to the census, which is taken every ten years, the last being taken in 1881.

By provinces, under the latest rearrangement the representation in the Commons is as follows:—

92—Ontario, 65—Quebec, 21—Nova Scotia, 19—New Brunswick,	Original provinces of the confederation.
6—Prince Edward Island, 5—Manitoba, 6—British Columbia,	By terms of Statutes admitting them.

Bills for appropriating any part of the public revenue or imposing any tax or impost must originate in the House of Commons, but no such bill can be introduced unless recommended by message from the Governor General.

The privileges and immunities of the Senate and the House of Commons are defined by the Parliament of Canada, but must not exceed those enjoyed by the Imperial House of Commons in 1867. The sittings are annual, but may be often

The naturalization laws are as follow:—

1. Alien women married to British subjects become, *ipso facto*, naturalized British subjects.

2. Aliens, after three years' residence, bringing certificates of good character, on taking the oath of residence and allegiance before a judge, commissioner, or magistrate, and causing the same to be registered in a court of record, can have a certificate of naturalization given them, and enjoy all privileges of British subjects.

Voting in elections for representatives sitting in the Commons is by ballot.

The qualifications of voters for the Dominion House of Commons are as follows: "Person," under the Franchise Act, means a male person, including an Indian, and excluding a person of Mongolian or Chinese race. Every person of the full age of twenty-one years, a British subject by birth or naturalization, is entitled to vote on being registered, provided he is the owner of real property, within a city, of the actual value of $300, or, within a town, of the actual value of $200; or is the tenant of real property within cities or towns, under lease at a monthly rental of at least two dollars, or quarterly rental of twelve dollars, or annual rental of twenty dollars, having been in possession for at least one year; or has been the *bona fide* occupant, for at least a year, of real property, within a city, of the actual value of $300, or, within a town, of the value of $200; or is a resident, within a city or town, deriving an income from earnings, or investments, in Canada, of not less than $300 a year; or is the son of any owner of real property, which property is of sufficient value to qualify both father and son; or, in the event of the father's death, has been resident upon such property, continuously, for a year with his mother.

In counties every person is entitled to vote, on being registered, who is of the age of twenty-one years, a British subject, and the owner of real property, within the electoral district, of the value of $150, or is tenant under the same conditions, as to rent, as in cities and towns; or is a *bona fide* occupant of real property of the value of $150; or is a resident, with income from earnings, or investments, of $300; or is the son of a farmer living with his father on a farm of sufficient value to give both father and son votes; or is the son of farmer, living with widowed mother; or is the son of any other owner of real property in the electoral district, under the same conditions as the father living or dead;

or is a fisherman and is owner of real property and boats, nets, fishing gear and tackle of the value of $150.

Persons disqualified for voting by the Act are—1st, the judges of the various courts; 2nd, revising and returning officers and election clerks; 3rd, counsel, agents, attornies, and clerks employed by the candidate either before or during the election, and who have received, or expect to receive, any sum of money, fee, office, place, or employment from any candidate; 4th, Indians outside of the four original provinces of the Confederation.

The revising officers who prepare the electoral lists are appointed by the governor-in-council and hold office during good behaviour. They must be either senior or junior county court judges, barristers or notaries of at least five years' standing.

By the Act of Union the Dominion Government has, speaking without technical accuracy, control of all matters which by that Act are not specially delegated to the provinces. It has power to make laws for the peace and good government of the whole Dominion, as also to regulate :

1. Public debt and property.
2. Trade and commerce.
3. Indirect taxation.
4. Borrowing on the public credit.
5. The postal service.
6. The census and statistics.
7. Militia and defence.
8. Lighthouse and coast service.
9. Navigation and shipping.
10. Quarantine.
11. Fisheries.
12. Currency and banking.
13. Weights and measures.
14. Bankruptcy and insolvency.
15. Naturalization
16. Marriage and divorce.
17. Penitentiaries.
18. Criminal law, including procedure in criminal cases.

PROVINCIAL CONSTITUTIONS.

The Government of Canada appoints the Lieut.-Governors, of whom there is one for each province, whose salary is paid by the Dominion Parliament.

Each province has its own elective assembly and administration with full power to regulate its own local affairs as set forth in the Confederation Act; to dispose of its revenues and enact such laws as it may deem best for its own internal welfare, provided only that such laws do not interfere with, and are not adverse to, the legislation of the Federal Parliament.

The Dominion Government assumed the debts existing at the time of the Union, agreeing at the same time to pay the provinces an annual subsidy, which is a grant equal to eighty cents a head of the population of the four provinces originally forming the Dominion, as ascertained by the census of 1861, except in in the case of New Brunswick and Nova Scotia, where it was arranged that the subsidy should increase each decennial census till the population in each case reached 400,000.

Besides this subsidy there is given to each province an annual allowance for government, and also an annual allowance of interest on the amount of debt allowed, where the province has not reached the limit of the authorized debt.

The provinces retained possession of the lands belonging to them before Confederation. Manitoba, having no public lands at the time of its creation into a province, has since received from the Dominion Government a gift of swamp lands.

The provinces appoint all the officers required for the administration of justice, with the single exception of the judges.

They regulate:—1st, Education; 2nd, Asylums, hospitals, charities and eleemosynary institutions; 3rd, Common gaols, prisons and reformatories; 4th, Municipal institutions; 5th, Shop tavern and other licenses; 6th, Local works; 7th, Solemnization of Marriage; 8th, Property and civil rights; 9th, Administration of justice, so far as the constitution, maintenance and organization of provincial courts of both civil and criminal jurisdiction and the

appointment of magistrates or jnstices of the peace, are concerned.

Emigration and immigration are subjects of both fcderal and provincial legislation, but provincial laws on the subject must not conflict with federal enactments.

The general principles of the Canadian constitution are; representative governments by ministers responsible to the people; a Federal government having charge of the general public good; and Provincial governments attending to local and provincial interests.

The Provinces have not any power to organize and maintain a provincial military force, being in this respect unlike the States in the Union to the south; nor have they final legislation, the Dominion Government possessing, under the constitution, the power of veto.

The North-West territories are provided, for purposes of local government, with a local board called the North-West Council composed of the stipendiary magistrates (appointees of the Federal Government) and others elected by the people. A legislative assembly may be formed in place of the North-West Council as soon as the elected members of any Council amount in all to 21 persons. Measures will be taken during the present session of Parliament to provide for the representation of the territories in the Federal Parliament.

Excepting in Prince Edward Island, Municipal institutions have been adopted in all the Provinces of the Dominion, the germ of which is in the municipality. Several of these form a township, and these in turn are subdivisions of the county. The council of each county, township, city, town and incorporated village has power to pass by-laws for obtaining such real and personal property as may be required for the use of the corporation; for appointing and paying pound-keepers, fence-viewers, overseers of highways, road-surveyors, road-commissioners. valuators; for granting money in aid of agricultural societies, mechanics' institutes, manufacturing establishments or road companies; for regulating driving on roads and bridges; egress from buildings, and making drains; for inflicting certain fines; for planting ornamental trees and prohibiting the sale of intoxicating liquor under Temperance Acts passed by the Legislature.

Each village of 750 or more inhabitants, each town of 2,000 and upwards, and each township has its council elected annually by the rate payers. The whole have, by their reeves and deputy reeves, a representation in the county council which meets periodically. A vast amount of business, that needs special Acts of Parliament in Great Britain, is successfully carried on by these municipal bodies under the provisions of the general law. Taken in the large, it may be said that Canada is pre-eminently the land of self-government. The people have been trained for years in municipal government, and, by it, keep control of expenditure for township purposes, as through the Provincial Legislatures and the Federal Parliament they keep control of expenditures for provincial and federal purposes.

ADMINISTRATION OF GOVERNMENT.

The business of the country is transacted by the members of the Cabinet, each of whom, as a rule, presides over a department.

These departments are as follows.—

1st; The Governor General's office.

2nd; The Privy Council office, with charge of state papers and records of council.

3rd; The Department of the Minister of Justice and Attorney-General, including the management of penitentiaries.

4th; The Department of Railways and Canals.

5th; The Department of the Minister of Public Works, having control of all public works, other than railways and canals.

6th; The Department of the Minister of the Interior, including: *a*, Dominion Lands; *b*, Geological Survey.

7th; The Department of the Secretary of State, including: *a*, official correspondence with the Governor-General's office and with the Lieutenant-Governors of the Provinces; *b*, The printing and publishing of the Official Gazette; *c*, The registration of all public legal documents; *d*, The Government stationery and Queen's Printer's office.

8th; The Department of the Minister of Marine and Fisheries, including: construction and maintenance of lighthouses; river police; revenue coast-guard; quarantine; protection of fisheries and fish culture.

9. The Department of the Minister of Militia and Defence, including: militia, fortifications and military schools.

10. The Department of the Minister of Finance, including: Treasury board, government savings' banks, and audit.

11. The Department of the Minister of Customs.

12. The Department of the Minister of Inland Revenue, including: collection of the excise; canal and timber slide tolls; ferry dues and the carrying out of the Acts relating to the inspection of food, gas, weights and measures.

13. The Department of the Postmaster-General, including Post-office savings' banks.

14. The Department of Agriculture, including: the Patent office; census and statistical office; and immigration.

In addition to these there are the Department of Mounted Police, and the Department of Indian affairs, administered by the President of the Privy Council.

VI.

THE POPULATION OF CANADA.

The people to whom it has fallen to conquer this vast region from its primeval solitude, and to make it contribute to the world's wealth and wants, have had a hard task, from a variety of causes.

Population, as we have seen, was first attracted to the continent of North America from Europe, and scattered settlements were formed from the Gulf of St. Lawrence to the Gulf of Mexico. These immigrants peopled the regions contiguous to the coast, and population slowly pushed its way into the back country in an ever-widening circumference. While this movement was progressing along the Atlantic Coast, the descendants of the few hardy Norman emigrants who had secured a foothold at the entrance of the St. Lawrence River pushed vigorously forward, exploring and settling the St. Lawrence and its tributary rivers and streams.

Two centres of population were thus formed on this continent. Sometimes an advantage secured by one centre attracted wanderers from the other centre. Thus, the withdrawal of the United

States—the second great country in area on this continent—from the British Empire, caused an extensive movement of population from the Atlantic sea-board between the St. Croix and the Delaware Rivers, to British territory, thousands going from New York and other ports to Nova Scotia and New Brunswick by water, and tens of thousands painfully forcing their way through forests to the then unoccupied regions north of lakes Erie and Ontario.

The cession of Acadia to England, by the French, rendered it necessary, as a precautionary measure, that numbers of the French Acadians should be deported from Nova Scotia and scattered in little communities from Maine to Louisiana. These, in after years, attracted the French population of what is now Quebec Province to the Eastern or New England States, where by the slow accretion of years there is at present a considerable body, chiefly employed in factories.

It is difficult to tell which of these two centres, in the course of the years has the better succeeded in winning population from each other and from European countries. Up to 1840 the Canadian centre had obtained an absolutely larger number of European immigrants. Then came, practically, the opening up of the Western States, a region which first began to attract attention in 1830. This fact, taken in connection with the movement of population from Ireland owing to famine, gave a greater impetus to the United States centre, and it rapidly passed the Canadian in the race for population. The attractions of new lands of reputed fertility were great, and many thousands of Canadians passed over to the newly opened regions, the movement continuing for years. Canada's North-West Territory, the counterpart, and in many respects the superior, of the Western States, was locked up and was destined to remain locked up for 30 years, the Hudson Bay Company holding the key.

The territorial claims of this trading company were purchased by the Canadian Government in 1869, and Canada, to recover her lost headway, began at once to develop the new region, prosecuting the survey of lands with such energy that there are now over 70,000,000 acres completely surveyed.

In the meantime, for a whole generation, population had spread throughout the Western States towards the boundary line. When the restraints to settlement were removed by the purchase of the

territory, there began a movement of population from the United States to the Canadian North-West, which has equalled in volume any of the many streams that in the past, now moving in one direction and now in another, have helped to mix up the peoples on the border land of the two countries to the great advantage of both.

The statistics of population and immigration in Canada in view of the general continental movements are interesting.

In 1806 the population, of what is now known as Canada, was 455,899. It had increased to 4,324,810 in 1881, when the latest census was taken.

Table showing the increase of population in the Dominion of Canada:

YEAR.	POPULATION.	YEAR.	POPULATION.
1806	455,899	1861	3,323,292
1834	1,302,961	1871	3,602,596
1844	1,802,889	1881	4,324,810
1851	2,547,158		

Table showing additions to population by Immigration:

YEAR.	IMMIGRANT SETTLERS.	YEAR.	IMMIGRANT SETTLERS.
1868	12,765	1877	27,082
1869	18,630	1878	29,807
1870	24,706	1879	40,492
1871	27,773	1880	38,505
1872	36,578	1881	47,991
1873	50,050	1882	112,458
1874	39,373	1883	133,624
1875	27,382	1884	103,824
1876	25,633	1885	79,169

At the port of Quebec a registry is kept of the nationalities of arriving immigrants from which the following facts are taken.

The nationalities of the immigrants of 1885, compared with those of 1884, were as follow—

	1884.	1885.
English	18,638	10,511
Irish	4,473	2,107
Scotch	3,040	2,099
Germans	1,237	510
Scandinavians	3,451	1,489
French and Belgians	150	104
Italians	35	...
Russians	322	50
Austrians	95	18
Icelanders	38	93
Roumanians	50	..
Bosnians	..	49
	31,529	17,030

The number of single men arrived was, 5,977.
The number of single women arrived was, 2,154.

The trades and callings of the male steerage passengers, as per passenger lists, were as follows :—

Farmers	1,071
Farm labourers and labourers	4,449
Mechanics	886
Clerks	26
	7,422

The following table shows the number of immigrants, chiefly children, brought during recent years to Canada under the auspices of charitable societies and individuals :—

—	1881.	1882.	1883.	1884.	1885.
Earl of Shaftesbury	.....	.....	35	.....	33
Miss Bilborough	97	70	189	.....	.....
Miss Macpherson	98	204	197	172	187
Mr. Middlemore	61	74	125	148	20
Miss Rye	117	121	159	169	128
East London Family Emigration Fund of Hon. Mrs. Hobart	39	.....	.....	226	53
Children's Home, London	.....	39	.....	.....	.....
Rev. M. Nugent, Liverpool	35	44	.....	.....	.....
South Dublin Union	77	82	.....	.....	.....
Rev. Mr. Stevenson	44	.....	42	77	.....
Catholic Protective Society, Liverpool	.....	30	100	192	178
Kingswood Reformatory, Bristol	.....	.....	.....	.....	.....
Mrs. Birt	70	120	108	220	83
Mr. Quarrier, Glasgow	.....	.....	.....	263	385
Rev. Mr. Stephenson, Childern's Home, Hamilton	.....	41	.....	.....	82
Cardinal Manning, Dublin	88	72	62	.....	.....
Miss Kennedy, Dublin	.....	.....	.....	.....	.....
Carrick Shannon Union	8	.....	.....	.....	.....
Boys' Agricultural School	6	.....	.....	.....	.....
Friends' Mission, Dublin	6	.....	.....	.....	.....
Mr. Meredith, London	12	.....	.....	.....	.....
Boys' Farm School, Birmingham	.....	2	.....	.....	.....
Rev. Mr. Wood, London	.....	15	.....	.....	.....
Mrs. Cadie, of Kent	.....	18	.....	.....	.....
Lord A Douglas	.....	40	.....	35	15
Tralee Convent	.....	13	.....	.....	.....
Dr. Barnardo, London	.....	56	173	266	400
Mohill Union, Leitrim	.....	10	.....	.....	.....
Prescott Board Guardians, Liverpool	.....	.....	28	45	.....
Boys' Refuge, London	.....	.....	.....	40	.....
Boys' Home, Southwark, London	.....	.....	.....	52	96
Cardinal Manning	.....	.....	.....	56	48
Colonization Fund, Mr. J. F. Boyd, London	.....	.....	.....	50	.....
Red Hill Reformatory	.....	.....	.....	.....	7
Feltham Reformatory	.....	.....	.....	.....	25
Mr. Whitewill, Bristol	.....	.....	.....	.....	14
Waifs and Strays Association, London	.....	.....	.....	.....	7
Dr. Shea, Berkdale	.....	.....	.....	.....	9
Total	727	1,048	1,218	2,011	1,746

The following table will show the value of cash and effects reported at the agencies and through the customs, as brought into Canada by the settlers, and also the actual cost to the Government of immigration and gain to Canada through the expenditure:—

Years.	Value of effects.	Cost to Canada.	Gain to Canada.
	$	$	$
1875	1,344,573	302,771	1,041,802
1876	686,205	328,178	385,035
1877	632,269	229,652	402,617
1878	1,202,569	150,351	1,052,218
1879	1,152,612	212,224	940,388
1880	1,295,565	161,213	1,134,352
1881	4,188,925	214,251	3,974,674
1882	3,171,505	215,339	2,956,166
1883	2,784,881	373,452	2,410,924
1884	4,814,872	511,208	4,303,664
1885	4,143,866	423,651	3,720,215

The population, thus gathered together and seeking to accomplish the task of developing the vast country entrusted to them, and of supplying it with all the paraphernalia of modern civilization, were at the last census found to be divided along lines, now to be mentioned.

The population at the last census, which was taken on the 4th of April, 1881, was 4,324,810. Between that period and the 4th of April, 1886, the inhabitants are estimated to have increased to 4,776,000. The proportion of the sexes calculated from the returns of the census of 1881, is 101.2 males to 98.8 females.

According to the census of 1881, 84.90 per cent. of the inhabitants of Canada are native born and 96.96 per cent. British born. The natives of Ireland numbered 185,526; of England, 169,504, and of Scotland, 115,062. Those of the United States numbered 77,753, and of Germany 25,327.

The religions of the people as given in the census of 1881 were: Protestants, 2,436,554; Roman Catholic, 1,791,982; Jews, 2,393; Pagans, 4,478; without creed and creed not given, 89,403.

The larger Protestant denominations were as follows: Methodists, 742,981; Presbyterians, 676,165; Church of England, 574,818; Baptists, 296,525.

Classifying the population according to *ages* and denominating the classes as follows: "Infants," persons under one year old; "children," from one to five years of age; "boys and girls, from

five to fifteen; "youths and maidens," from fifteen to twenty; "young men and women," from 20 to 30; "middle-aged men and women," from 30 to 50; and "old men and women," 50 years and upwards, the following results are obtained:—

	MALES.	FEMALES.
Infants	61,704	59,473
Children	238,318	220,956
Boys and girls	540,376	521,174
Youths and maidens	237,317	239,281
Young men and women	376,973	384,007
Middle-aged do	430,674	421,954
Old men and women	274,505	250,337
Not given	29,921	29,848

Of the aged, 27,052 were 80 years old and upwards, and of these 2,999 were 90 years old and upwards. These latter were: males, 1,416; females, 1,583. A special investigation into the claim of persons to be centenarians was made after the census of 1871. It showed that there were in Canada nine persons from 100 to 113 years old.

In 1881, according to the census returns, 36 per cent. of the males and 37 per cent. of the females of 15 years of age and upwards, were living in the married state; about 4 per cent. of the males and nearly 6 per cent. of the females, at the same period of life, were living in a state of widowhood; 60 per cent. of the males and 57 per cent. of the females had never been married.

The *occupations* as returned by the census-taking are arranged under a great number of heads. For the purpose of a general view it may be said that the agricultural class includes 662,630 persons; the commercial class, 107,649; the domestic class, 74,830; the industrial, 287,295; the professional, 52,974, and not classified, 205,228. To be somewhat more specific, the division may be as follows: Ministering to government, 9,334; to religion, 11,468; to health, 5,087; to law, 4,749; to education, 19,723; to art, science and literature, 8,816; to entertainment or clothing, 29,917; traders, 34,035; domestic servants, 63,431; contractors, artisans and mechanics, 149,930; manufacturers, 25,572; engaged in mining, 6,541; engaged in pastoral pursuits and agriculture, 662,630; engaged in land carriage, 8,220; in sea navigation, 18,426; dealing in food, 43,280; labourers, 165,707; following other pursuits, 66,364; not classified, 205,228.

The occupied habitations of all kinds according to the census of 1881 numbered 753,017, which was 180,304 more than the returned in the census of 1871.

Aborigines.

The aboriginal people of the North American continent are divided into two groups, the one Malay-Polynesian, and the other Turanian in origin. These groups are both represented in Canada; the Algonquins belonging to the former, the Iroquois, Tinnehs, and Esquimaux to the latter. Through the Algonquins, Canada's aborigines are connected with the peoples inhabiting the vast area from Malacca to New Zealand, and from Madagascar to the Sandwich and Easter Islands. Through the Iroquois, they are connected with the Finnic, Turkic, and Mongolic classes of Asian and European peoples. The two are distinct. The Algonquin languages differ radically from those of the Iroquois both in grammatical and in verbal forms. The flatter face, inferior stature, and more delicately formed extremities of the Algonquins are in marked contrast with the prominent features, the larger proportions and muscular development of the Iroquois. The Iroquois is pre-eminently a landsman, a warrior, and a lover of manly sports, while the Algonquin loves the water, is unaggressive, and spends his spare time in idleness. Taciturnity, with all that it implies, such as the absence of humor, is characteristic of the Algonquin, but not of the Iroquois. The Iroquois was originally a sun-worshipper, but such the Algonquin never was. In fact, these two families have nothing in common beyond the mere accidents of condition and certain minor features of life, resulting from mutual intercourse. "The Algonquin and the Iroquois, who have jointly contributed to the portraiture of the ideal red man, are the representatives of two families as distinct as any that can be found outside the Aryan and Semitic areas of the old world."

The Indians of Canada, springing from two distinct ancestries, may be divided into four families: The Esquimaux or Innuits, the Tinnehs, the Algonquins, and the Huron-Iroquois.

The Innuits inhabit the littoral of the North Sea from Labrador to Alaska, and the northern shores and islands of Hudson's Bay. The Tinnehs, or Dénè Dindjiés, inhabit the val-

ley of the Athabasca, the region east and north of the Great Slave Lake, the Peace River district, the regions north of Great Bear Lake bordering on the Esquimaux, the mountains of the Mackenzie River, the slopes of the Rocky Mountains, and almost the whole of the region west of the Rockies including Vancouver and Queen Charlotte's Islands, from which latter places they have poured in adventurous bands through the passes of the mountains and taken possession of the country south of the Esquimaux territory.

The Algonquins are found in the interior of Labrador and throughout the region between the Atlantic sea-coast and Lake Superior. They have also found their way west to the southern regions of the Canadian North-West, where the Saulteaux, Prairie Crees, Wood Crees, Blackfeet, Bloods, and Piegans numbering about 32,000 have taken root, occupying territory to the south of that taken by the Pacific Coast Indians.

Besides these races, there are scattered bands of the Huron-Iroquois, as the Hurons of Lorette near Quebec city, those of Caughnawaga, Lake of Two Mountains, St. Regis and the Iroquois found in several places on the peninsula between Lakes Erie and St. Clair. These are east of Lake Superior. West are to be found the Assiniboines and the Sioux, belonging to the Dakotas, and thus allied to the Iroquois as sprung from a common Turanian or northern Asiatic origin. The Indians of this origin number about 10,000, the Innuits about 4,000, and the Algonquins about 117,000; making in all, according to the latest returns, a total aboriginal population of 131,957. Of these 85,329 are reported to the Indian Department as resident on their allotted reserves; the rest are nomadic.

The Indians of Canada are in various stages of development. Some are polygamous, while some have adopted the civilization of the white population to such an extent as scarcely to be distinguished from them. Some would not know what a vote for a Member of Parliament means. Others possess the electoral franchise and prize it highly. Some are increasing in numbers

and others are decreasing. The returns as to Indians resident on reserves show the following condition of things :—

YEAR.	1884.	1885.
Numbers on reserves	88,897	85,329
Quantity of land cultivated.....acres	80,725	85,911
New land made each year.....acres	3,861	3,242
Dwellings	10,712	11,509
Barns or stables	3,563	3,992
Threshing machines	47	64
Fanning mills	386	401
Ploughs, harrows, and waggons	5,749	6,307
Other implements	19,888	17,529
Horses	7,332	19,623
Cows	4,717	5,682
Sheep	1,833	1,984
Pigs	7,289	8,504
Oxen	1,993	1,447
Young stock	5,287	7,033
Hay crop for year.....tons	18,550	18,613
Grain.....bushels.	211,630	319,631
Potato.....bushels.	240,205	280,230
Fish caught.....value	$994,378	$701,417
Furs	$332,435	$711,393
Other industries	$131,246	$181,848

The Indians west of the Ottawa River, to Lake Superior, along the great Lakes, are the most advanced. Of the tribe called the Six Nation Indians, the Superintendent-General of Indian affairs (Sir John A. Macdonald) writes in his annual report for 1884: "Many of their farms are well cultivated, and the products of the soil and dairy exhibited at their annual agricultural exhibitions commanded the admiration of all persons who attend them. Their exhibition of this year was remarkably successful, and they combined with it the centennial celebration of the grant, made to them by the Crown, of the tract of land of which their reserve forms a part, in recognition of their loyalty and valor, as practically proved on numerous occasions on the field of battle in defence of the British flag."

Upon the departure of His Excellency the Marquis of Lorne and Her Royal Highness the Princess Louise, the Six Nations Council sent a farewell address; and upon the arrival of his Excellency the Marquis of Lansdowne a decorated address of welcome was forwarded by them. Upon learning the death of His Royal Highness the Duke of Albany, the chiefs again

evinced their sympathy and loyalty by a message of condolence to the Queen.

The Government of Canada has taken charge of the Indians. Like an army, they have been, and are still, in large numbers, fed and clothed by the Government. With their consent their lands have in many instances been sold until an Indian fund has accumulated amounting now to over $3,000,000. Schools have been established for them, and about 140 teachers, many of whom are Indians, are engaged in teaching. In these schools are over 4,000 pupils, and the annual inspection shows good results. Many of these Indians have aided by their labour in constructing the Canadian Pacific Railway. In some instances they have become contractors and employers of labour. In one or two instances the tribes have shown themselves so well able to manage their own affairs that the Government has released them from their position as wards of the country and has given into their own keeping the moneys obtained from the sale of their lands. Under an Act of Parliament, passed in 1884, privileges have been conferred on the more advanced bands with a view of training them for the exercise of municipal powers. Under an Act passed in 1885, Indians, whether on Indian reserves or mingling with the general community, have conferred on them the right to vote for members of Parliament on the same conditions as other inhabitants of Canada. These Indians, thus placed on a perfect equality with the Whites, demonstrate the success which has attended the efforts of Canada to raise them from their state of savagery to a civilized condition.

The same effort, possibly (especially in the North-West), with less promise of ultimate success, is being made with all the Indian tribes. Schools and Farm instructors are provided by the State. Agents and Inspectors have been appointed whose duty it is to look after the bands committed to their charge; to see that the rations provided are kept up to a uniform standard of excellence; to prevent the Indians being imposed on by worthless and greedy whites; to guard them against the evils resulting from the introduction of spirituous liquors, heavy penalties for which offence are imposed by the State, and generally to aid them in every way to prepare to gain their livelihood as farmers, labourers and operatives, instead of by the chase.

The task undertaken by the people of Canada is a difficult

one—no less than the reclamation of over a hundred thousand savages and the development within them of the essentials of civilization. It is rendered more difficult by the presence of Whites who bring with them the evils of civilized society. As a compensatory advantage the Government has the aid of the various Christian denominations, who have established missions in many places and have won the regard and confidence of the Indians.

The difficulties of the task may be understood from the fact that, though on the reserves in the North-West Territories the Agents only distribute food twice a week, warning each recipient at each distribution that the rations are intended to last for three days, or four as the case may be, yet, so like children are these red men, that they eat up the whole supply at one meal. They have not yet learned the wisdom of being provident for three days ahead. So great is the difficulty of teaching them the initial step toward a higher plane of existence.

The total expenditure on account of the Indian population beyond that provided for by the Indian fund, was in 1885, $1,109,-604, of which amount the sum of $478,038 was expended in the purchase of provisions for the destitute Indians.

VII.

THE LAND OF CANADA.

The land of Canada consists of granted and ungranted land. The ungranted land in the older provinces is the property of the provinces and is disposed of by officials appointed for the purpose, in accordance with the provisions of statutes passed by the several Provincial Legislatures.

The land in Manitoba and the North-West Territories belongs to the whole people of Canada and is administered by the Federal Government.

The following is a concise statement of the essential features of the law governing the disposal of Dominion lands in Manitoba and the North-West Territories:—

System of Survey.

The Dominion lands are laid out in quadrilateral townships, each containing thirty-six sections of as nearly one mile square,

or 640 acres, as the convergence of meridians permits; the sections are situated and numbered as in the following diagram.—

N.

	31	32	33	34	35	36
	30	29	28	27	26	25
	19	20	21	22	23	24
W.	18	17	16	15	14	13 E.
	7	8	9	10	11	12
	6	5	4	3	2	1

S.

The townships are numbered in regular order northerly from the international boundary or forty-ninth parallel of latitude, and lie in ranges numbered, in Manitoba, East and West from a certain meridian line styled the Principal Meridian, drawn northerly from the forty-ninth parallel, and throughout the North-West Territories, in ranges numbered westerly from other initial meridians styled the Second, Third, Fourth Meridian, and so on, according to their order westward from the Principal Meridian.

Each section of a township, or 640 acres, is divided into quarter-sections of 160 acres each, styled, according to position, the North-West, North-East, South-West or South-East quarter-section, and to facilitate the descriptions of letters patent of less than a quarter-section, every section is supposed to be further divided into quarter-quarter-sections, or 40 acres, numbered as shown in the following diagram, and called legal sub-divisions:—

N.

	13	14	15	16
W.	12	11	10	9 E.
	5	6	7	8
	4	3	2	1

S.

Disposal of Dominion Lands.

In regard to their disposal the Dominion lands in Manitoba and the North-West Territories may be considered as divided

into two classes, viz.: Even-numbered and odd-numbered sections.

The even-numbered sections, excepting those numbered 8 and 26, which are allotted to the Hudson's Bay Company, are open for homestead and pre-emption entry, and the odd-numbered ones, excepting 11 and 29, which are School Sections, are held for sale, and also as land grants in aid of the construction of Colonization Railways.

Homesteads and pre-emptions.

Any person, male or female, who is the sole head of a family, or any male who has obtained the age of eighteen years, is entitled, on making application before the Local Agent of the District, in which the land he desires to be entered for is situated, and paying an office fee of ten dollars, to obtain homestead entry for any quantity of land not exceeding one quarter-section, or 160 acres, of the class of land open to such entry. This entry entitles the holder to occupy and cultivate the land to the exclusion of any other person, the title remaining in the Crown until the issue of patent for the land.

Any person obtaining homestead entry is entitled to obtain, at the same time, on payment of a further office fee of ten dollars, a pre-emption entry for an adjoining quarter-section, and to use and cultivate the same in connection with his homestead.

The settler is allowed six months from the date of obtaining homestead entry, within which to complete or perfect such entry by taking, in his own person, possession of the land, and beginning residence and cultivation, and if the entry be not perfected within such time it becomes void; except where entry is obtained on or after the 1st of September in any year, and the six months would expire before the 1st of June following, in which case an extension of time to the latter date is granted.

In the case of immigrants, or other persons, intending to settle together, the Minister of the Interior, on requisition signed by them, may authorize any person they may name to obtain homestead and pre-emption entries for them before their arrival in the territory in which the land they desire to occupy is situated, and in such case the time for perfecting entry may be extended to twelve months.

The settler, on proving that he has resided on and cultivated the land for which he has homestead entry during three years from the date of perfecting his entry, is entitled to a patent from the Crown for the same, provided that he is a British subject by birth or naturalization; in case of his death, his legal representatives succeed to the homestead right, but they, or some of them, must complete the necessary duties.

In cases where it is not convenient for the settler to reside upon his homestead for the three years from the date of perfecting entry, the conditions necessary to obtain patent can be fulfilled by his erecting a habitable house on his homestead and residing therein for the three months next prior to date of his application for patent; and from the date of perfecting his entry to the beginning of the three months' residence aforesaid, by his residing, for at least six months in each year, within a radius of two miles from his homestead quarter-section.

He must also in such case break and prepare for crop, within the first year, at least ten acres of his homestead; within the second year he must crop the said ten acres and prepare for crop fifteen acres additional; and during the third year he must crop the twenty-five acres already broken and prepare for crop fifteen acres more.

A homesteader has also the privilege of obtaining a patent for his homestead before the end of three years, by paying the Government price at the time for the land, and proving that he has resided thereon for twelve months from the date of perfecting entry, and that he has brought thirty acres thereof under cultivation.

In case a certain number of homestead settlers, embracing not less than twenty families, with a view to greater convenience in the establishment of schools and churches and for advantages of a similar nature, ask to be allowed to settle together in a hamlet or village, the Minister of the Interior may dispense with the condition of residence on the homestead, but the condition of cultivation must be carried out on each one.

A homestead entry is liable to be cancelled at any time that it is proved that the settler has not resided upon and cultivated his homestead for at least six months in any one year from the date of perfecting entry; but in case of illness, properly vouched for, or in the case of immigrants returning to their native land to

bring out their families to their homesteads, or in other special cases, the Minister of the Interior may grant an extention of time during which the settler may be absent from his homestead, but such leave of absence will not count in the term of residence.

A settler having a pre-emption entry in connection with his homestead, on becoming entitled to a patent for the homestead, is entitled to obtain a patent for his pre-emption by paying the Government price for the land, but such payment must be made within six months after he has become entitled to a patent for his homestead, otherwise his pre-emption right is forfeited.

The right of pre-emption in connection with homestead entry will be discontinued from the 1st of January, 1890.

The privilege of homestead and pre-emption entry only applies to agricultural lands.

Wood for Settlers.

In townships which consist partly of prairie and partly of timber lands, the timber lands are, where it is considered expedient, divided into Wood Lots of not more than twenty acres and not less than ten acres, and any settler not having more than ten acres of wood land on his homestead quarter-section, is entitled, on making application before the Local Agent, to be entered for one of such lots, the applicant paying the price fixed for the same, and on his fulfilling the requirements of the Act, in respect to his homestead, a patent shall issue to him for such wood lot.

The cancellation of the homestead entry also involves the cancellation of such wood lot, and the forfeiture of the purchase-money for the same.

The settler is prohibited from selling, prior to the issue of patent, any of the timber on either his homestead or pre-emption quarter-section, or on the appurtenant wood lot, without permission from the Minister of the Interior, under penalty of fine or imprisonment, or both, as well as the forfeiture of his homestead and pre-emption rights.

Sales.

The odd-numbered sections of Dominion lands, excepting School Sections and where they may be reserved as grants in aid

of Colonization Railways, are open for purchase at such prices and on such terms and conditions as may be fixed from time to time by the Governor-in-Council.

Educational Endowment.

The Parliament of Canada has made a liberal provision in aid of education in Manitoba and the North-West Territories by setting apart Sections 11 and 29 in every township throughout the extent of the Dominion Lands as an endowment for such purpose. These sections are styled School Lands, and are administered by the Governor-in-Council through the Minister of the Interior. It is provided that they shall be disposed of by sale at public auction at an upset price fixed from time to time by the Governor-in-Council; the moneys realized from such sales to be invested in Dominion securities, and the interest arising therefrom paid over to the Government of the Province or Territory within which the lands are situated, towards the support of the public schools therein.

Hudson's Bay Company's Sections.

Sections 8 and 26 in every fifth township, that is, in townships 5, 10, 15, 20, 25 and so on, and Section 8 and three-quarters of Section 26 in all other townships are reserved to the Hudson's Bay Company, under the terms and conditions of the deed of surrender from the said Company to the Crown by which the Company is entitled to one-twentieth of the land within the "Fertile Belt," which is found to be satisfied by the allotment of the said sections.

Settlers will experience no difficulty in obtaining a sufficient supply of fuel. In those portions of Manitoba and the North-West Territories where wood is not found to any great extent, nature has furnished coal as a substitute. In Southern Manitoba, wood may be obtained from the Turtle Mountains, Brandon Hills, and along the banks of the Souris River, and on completion of the Manitoba and South Western Railway to the Souris coal fields, which already reaches to within a few miles of them, settlers will be able to procure coal at any of the stations along the line of that railway.

In that portion of the Province of Manitoba lying north of the

Assiniboine and Qu'Appelle Rivers nearly every half-section of land will be found to contain a certain quantity of wood, and some parts of the tract are very thickly wooded. That portion of the District of Assiniboia which lies to the south of the Qu'Appelle and South Saskatchewan Rivers is fairly supplied with either wood or coal.

An abundant supply of wood will be found in all parts of the District of Alberta with the exception of that portion which lies to the south-east of the Belly and the Saskatchewan Rivers; here, however, as is the general rule in all parts of the North-West Territories, where there is no wood coal is found. On the Belly River are situated what are commonly known as the "Galt Coal Mines," owned by the North-Western Coal and Navigating Company, who during the last year mined and sold about 9,000 tons of coal. This Company has built a line of railway from Lethbridge, where the mines are situated, to Dunmore, on the line of the Canadian Pacific Railway, (108 miles), by which means they are able to furnish coal to Winnipeg and towns along the line of of the Canadian Pacific Railway at a moderate price. Coal mines are also worked at Medicine Hat on the line of the Canadian Pacific Railway, and at Edmonton on the North Saskatchewan River, and within a very short time there will be some opened at several other points.

The whole of the Saskatchewan District is abundantly supplied with timber both for fuel and building purposes, and the western portion contains extensive coal areas.

A large deposit of anthracite coal of first-class quality has been discovered on the line of the Canadian Pacific Railway, a short distance west of Calgary, and arrangements are now being made by capitalists with a view to its development.

Provincial Lands.

In the Province of Ontario it is provided that Public Lands which have been surveyed and are considered suitable for settlement and cultivation may be appropriated as free grants. Two hundred acres is the limit of the Act regulating the disposal of these as free grants. A single man over eighteen years of age, or a married man without children under eighteen residing with him is entitled to a grant of one hundred acres. The male head

of a family, or the sole female head of a family having a child or children under eighteen years of age residing with him or her, may obtain a free grant of two hundred acres and may also purchase an additional one hundred at the rate of 50 cents (2s) per acre.

The settlement duties required are as follows: to have at least 15 acres cleared and under cultivation, of which 2 acres at least are to be cleared and cultivated annually during five years; to have built a habitable house at least 16 by 20 feet in size; and to have actually and continuously resided upon and cultivated the land for five years. The locatee is not bound to remain upon the land all the time during the five years, but may be absent on business or at work, for, in all, not more than six months in any one year. A locatee who purchases an additional 100 acres under the regulations must, within five years from the date of sale, clear fifteen acres and cultivate the same before being entitled to a patent; but he is not required to build a house or reside on the purchased lot where he holds it in connection with a free grant. There are in the Province 123 townships open for location as free grants.

Outside of the free grant townships, uncleared land varies in price from 2 shillings to 40 shillings an acre, according to situation and soil. Cleared and improved farms can be bought at prices ranging from £4 to £10 an acre. The money can nearly always be paid in instalments covering several years.

In the Province of Quebec the Government have surveyed about six million acres of Crown Lands.

These lands purchased from the Government are to be paid for in the following manner: one-fifth of the purchase money is required to be paid the day of sale and the remainder in four equal annual instalments bearing interest at 6 per cent. But the prices at which these lands are sold are so low, viz.: from 1s 5d to 2s 5d, that these conditions are not very burdensome. The purchaser is required to take possession of the land sold within six months of the date of sale and to occupy it within two years. He must clear, in the course of ten years, ten acres for every hundred held by him and erect a habitable house of the dimensions of at least 16 feet by 20. The system of free grants is also followed, any person over 18 years may demand a permit of occupation of 100 acres from any Crown Land Agent, and if at the

end of four years he has cleared 12 acres and built a house he may get his title free of charge.

In the Province of New Brunswick there are three ways by which Crown Lands may be applied for and grants secured. 1st, under the Act relating to free grants of Crown Land; 2nd, under the Labour Act, and 3rd, by purchase at Public Auction. The conditions for obtaining a free grant are that the person approved shall commence clearing and improving the lot assigned to him, within one month after approval, and, within three months, improve the lot to the value of $20 (£4 3s 4d); within one year build a house fit for habitation of not less dimensions than 16 feet by 20, and shall cultivate not less than two acres; within three years cultivate not less than 10 acres and actually, and continuously, cultivate all the land chopped over during such three years.

The person receiving the allotment must be 18 years old or upwards, and can only secure a hundred acres of land.

Under the "Labour Act" the intending settler can apply for a lot not exceeding 100 acres in any part of the Province. The chief difference between this and the free grant plan is that the settler may elect to pay either $20 in cash to aid in the construction of roads and bridges in the vicinity of his location, or to perform labour on such roads and bridges in the vicinity of his location or to perform labour on such roads and bridges to the amount of $10 a year for three years. The conditions of settlement are in other respects the same as under the Free Grant system.

In the case of lands sold at auction, the upset price is 80 cents per acre, in addition to survey fee.

In addition to these Crown Lands open for settlement, there is in the Province a domain of 1,650,000 acres belonging to the New Brunswick Land Company, particulars concerning the disposal of which may be obtained in Edinburgh at the office of the Company.

It may be stated that Prof. Johnston, F.R.S., of England, carefully investigated the Province of New Brunswick, and in his report to Government says:—

"1st. The soil of New Brunswick is capable of producing food for a population of from five to six millions.

2nd. In the capability of growing all the common crops, on

which man and beast mainly depend, the whole Province of New Brunswick taken together, exceeds even the favoured Genesee Valley.

3rd. The climate is an exceedingly healthy one, and it does not prevent the soil from producing crops, which (other things being equal) are not inferior either in quantity or quality to those of average soils in England."

In the Province of Nova Scotia there are nearly four million acres of land belonging to the Crown. Much of this is barren and unfit for cultivation, but there is a great deal in blocks of from five to ten thousand acres of really valuable land, some of it being the best in the Province, quite accessible, and very near present settlements. The price of Crown Lands is $44 (£8 16s sterling) per 100 acres. No distinction is made in the price between 100 acres and smaller lots, as the difference in cost of survey, defrayed by the Government, is very trifling.

In the Province of British Columbia, the land and pre-emption laws are as follow: Every head of a family, widower or single man, eighteen years of age, being a British subject, born or naturalized, has the right to pre-empt a tract of land not exceeding 320 acres in extent, to the northward and eastward of the "Cascade Range" of mountains; and 160 acres in extent in other parts of the Province. Personal residence during a period of two years, reasonable intervals of absence being permitted, and improvements to the average of $2.50 per acre are necessary to complete the pre-emption right. Upon proof of these, the settler is entitled to claim his Crown Grant in freehold to the tract occupied and improved. The price to be paid is $1 per acre, payable in four annual instalments, the first to be paid one year from the date of record. The patent will be granted upon proof by declaration, in writing, of the settler himself and two other persons, of occupation for two years from the date of pre-emption. No person can hold more than one pre-emption claim at a time.

Unsurveyed or unreserved Crown Lands may be purchased in tracts of not less than 160 acres for $1 (4s 2d sterling) per acre payable at time of purchase.

Laws of Intestacy.

In connection with the land systems of Canada, the laws elating to the distribution of property are of interest.

There is no right of entail in Canada. Persons can dispose of their real and personal property by will as they may desire.

The laws relating to intestacy may be summarized as follow:

The laws of all the provinces, except Quebec, are founded upon the common law of England, but it has been so modified and amended that there is a striking lack of uniformity in the provisions of the various provinces, governing the distribution of the property of an intestate. An intestate is one who dies without a will or leaves one which is not valid. The property then has to be distributed among his relatives. The efforts of legislators have been to decide who have the best claims to priority of succession. By the common law of England property cannot ascend; that is, it cannot be inherited by a father, mother or grandparent of the intestate. This law is not now in force in Canada, except in New Brunswick. In that province, however, a recent decision, in the case of Wood versus De Forest, upset all previous decisions, and decided that the mother of an intestate was entitled to the property as next of kin, thus differing from the common law. In Ontario, the law that "property never ascends" has long since been set aside, but care has been taken to prevent grandfathers from inheriting real estate; the most remote descendant of the brother or uncle of the intestate excludes the grandfather. But grandparents share in personal property with uncles and aunts, both being only three degrees distant.

Nearness of Relationship.

There is no distinction as to the half blood or whole blood in intestate personal successions throughout the Dominion, except in Quebec, where a succession coming to brother and sister, nephews and nieces, issue of different marriages, is divided equally between the two lines, paternal and maternal, of the deceased; those of the whole blood sharing in each line, and those of the half blood sharing in their own line only, and where, if there be brothers and sisters, nephews and nieces on one side only, they inherit the whole of the succession, to the exclusion of all the relations of the other line. In Ontario, British Columbia, Keewatin and the North-West Territories, full-blooded and half-blooded relatives inherit equally, except when the inheritance

came to the intestate from some one of his ancestors, in which case all those who are not of the blood of such ancestors are excluded. In Nova Scotia, New Brunswick and Manitoba there is no distinction, but when a brother of whole blood and a brother of half blood are next of kin in Prince Edward Island, the former excludes the latter from succession.

The following shows clearly the working of the laws in the various provinces:—

If a man dies intestate, leaving no wife and child, his property goes to the next of kin, that is, the father of the representatives, in Ontario, British Columbia, Nova Scotia, Prince Edward Island, North-West Territories and Keewatin. In Manitoba it goes to the father; if no father, to the mother, brothers and sisters equally; if neither father, brothers nor sisters, to the mother; if no parents, brothers nor sisters, to next of kin. In Quebec it is divided into two equal portions; one of these goes to the father, and the other is divided amongst the brothers and sisters.

Everwhere if an intestate leaves a father and brother, the former succeeds to the property, except in Quebec, where it is equally divided; but if he leaves a mother and brother, the property is divided equally between them. Of course, if an intestate leaves children, the property goes wholly to them, unless his wife is alive, in which case she gets a third, except in Quebec, where she gets nothing. A widow and mother rank equally in Ontario, British Columbia, North-West Territories, Nova Scotia, New Brunswick and Prince Edward Island. In Manitoba the widow takes precedence, and in Quebec the mother does. Nephews rank equally with brothers; brothers take precedence of grandparents; nephews take precedence of grand nephews.

The above laws relate to personal property, but they also apply in the main to the distribution of real estate. In Quebec and Manitoba the laws are the same for both real and personal property. In Ontario, British Columbia and North-West Territories, the real property of a man dying intestate and childless goes to his father, except that which was obtained from the mother, which reverts in its original owner; in Prince Edward Island and Nova Scotia it goes absolutely to the father.

There is no law of primogeniture in Canada.

To inherit an intestate real property in any of the provinces except Quebec, the heir must have been born in wedlock, and he

cannot succeed if even he has been legitimated by the marriage of his parents subsequent to his birth. Quebec is the only province in which a child born out of wedlock can succeed to intestate property.

VIII

THE GEOLOGICAL SURVEY.

Connected with the machinery by which the lands of the Dominion are managed is a branch of the public service whose special work is to make a study of the mineral wealth of the country.

The geological survey of Canada was instituted by the provincial government in 1843, a grant of £1,500 having been voted for that purpose on the motion of Hon. S. B. Harrison, in consequence of petitions presented by the Natural History Society of Montreal and the Literary and Historical Society of Quebec. Previous to this date, a number of papers having reference to local points in the geology of the provinces of Quebec and Ontario—then constituting Lower and Upper Canada respectively—had appeared, but no extended systematic work had been undertaken, though the necessity of a geological survey had several years before this time rendered itself apparent to many of the more intelligent people of the country. It appears, indeed that as early as 1832, Dr. Rae presented a petition to the House of Assembly, praying for pecuniary assistance to prosecute a geological and statistical survey of the province of Upper Canada—a petition which was not even considered by the Committee of Supply to which it had been referred.

Mr., afterwards Sir, William Logan, on the recommendations of some of the most eminent geologists of the day, was selected to conduct the geological investigations for which provision had been made, and in 1843 assumed the position of provincial geologist.

From this small beginning, the survey has continued to increase in importance and usefulness to the present time, and in the course of its operations some of the greatest additions to the progress of modern geology have been made. After the confederation of the North American provinces, the field of activity of the geological survey became co-extensive with that of the new Dominion. Prof. Sedgwick had designated the survey, as origi-

nally undertaken, a "Herculean task," but that now involved by the addition of half a continent to the two provinces of old Canada, Sir W. Logan, in failing health, found himself unable to undertake, and in 1869 resigned in favour of the present director, Dr. A. R. C. Selwyn. Up to the date of Sir W. Logan's resignation, about 35 annual reports and other publications were issued, making in all over 4,000 pages, giving the results of explorations, and reports on minerals, ores and fossil remains met with in the course of the work. Of these publications the most important is the *Geology of Canada*, a volume of 983 pages which summarizes the results obtained by the survey to 1863. Since 1869, to the present year, the publications of the survey comprise about an equal number of volumes and memoirs with that of the previous period, but the aggregate number of pages is considerably over 6,000, and the number of maps, plans and illustrations accompanying the reports has been largely increased.

In 1881 the offices and museum of the geological survey were removed from Montreal, where they had been situated from the inception of the work, to Ottawa. There are now arranged and displayed in the museum over 15,000 geological specimens, consisting of rocks, ores, fossils, etc., the latter department representing over 3,000 Canadian species. There are also considerable collections of shells, plants, insects, an ethnological collection and the nucleus of a collection of the birds and mammals of Canada. It is anticipated that in the near future, museum accommodation more proportionate to the requirements of the collection, and allowing of its extension, will be provided. The survey is also supplied with a library of scientific reference works of about 6,000 volumes and a well equipped chemical laboratory.

In the more thickly populated eastern portions of Canada the work of the geological survey approximates in character to that of similar surveys in Britain and Europe; but, even here, a larger portion of the time of the geologist or his assistants is necessarily occupied in correcting and adding to the maps of the districts in which he may be at work, a circumstance rendered necessary by the want of really accurate topographical surveys. In the newer provinces and in the great uncultivated northern and western portions of the continent, however, the geologist must often be as well the pioneer, and is frequently obliged to carry out running surveys and construct reconnaissance maps of

vast tracts of country through which no instrumentally measured lines have as yet been carried. While not forgetting that his more special work is geological, the explorer must also endeavour to bring back with him such observations on the meteorology, botany, zoology and even details as to the number and character of the natives inhabiting these imperfectly known regions as may be of use in extending our knowledge of them. It will easily be understood from this explanation that geological work in such new districts is replete with interest and may frequently result in bringing to light important unknown or imperfectly recognized sources of wealth, such as the great new coal fields of the North Western plains or the petroleum deposits of the Athabasca. The work done in these regions is necessarily of an incomplete character, and the maps and reports published, while in themselves important advances in knowledge, must eventually be superseded, as settlement progresses, by others of a more complete and final kind. It thus happens that a considerable proportion of the energy of the survey has necessarily been directed to geographical work, and the surveyors engaged in these remote districts, through which no recognized means of communication exist, have frequently to contend with both hardship and danger in their progress.

Of work of this class carried out within the last fifteen years, and which has largely added to our knowledge of the topography of the Dominion, may be mentioned Dr. Selwyn's explorations in British Columbia in 1871 and 1875, and in the North-West Territory in 1873; Dr. Dawson's explorations on the mainland of British Columbia, in the Queen Charlotte Islands, from the Pacific Coast to Manitoba by way of the Peace River, and in the Rocky Mountains and elsewhere; Dr. Bell's explorations in the country between Lake Superior and the Hudson's Bay, on the Lower Athabaska, Nelson and Churchill Rivers, the coast of Hudson's Bay and other adjacent regions; also explorations by Prof. Macoun on the Peace River, Messrs. Richardson, McOuat and Low, north of Lake St. John, in the vicinity of Mistassini Lake and on the Rupert River, together with work by Messrs. Ells, McConnell and Tyrell in various parts of the North-West Territory; by Mr. Bowman in British Columbia and Mr. Lawson on and around the Lake of the Woods.

In the Eastern Provinces, above alluded to, consecutive and

more finished work is possible, and already the greater part of New Brunswick, the whole of Cape Breton and other portions of Nova Scotia, Quebec and Ontario have been geologically mapped in considerable detail—for the most part on a scale of 4 miles to the inch.

While Canada already makes a respectable showing in the matter of mineral products, its development in this respect is by no means commensurate with the extent and value of its actual mineral wealth, a fact due not only to the lack of capital for the extraction and elaboration of the minerals, but also to the want of experience with which many of the attempts in this direction have been undertaken. The operations of the Geological Survey are supplying as rapidly as possible a trustworthy knowledge of the fundamental structures of the more important regions, while the examinations of special mining districts and the statisticial information, which the survey has now undertaken to procure and publish, will tend still further to inspire confidence in foreign capitalists.

The total staff of the survey at present engaged in Geological, Natural History and accessory work is about forty-five, to which, each summer, considerable temporary additions are made for field work.

From 1870 to date, the total average annual expenditure in connection with the Geological Survey has been about $52,000.

IX.

PUBLIC DEBT OF CANADA.

The public debt of Canada on the first of July, 1885, was as follows:—

Gross debt		$264,808,520
Made up thus:—		
1. Funded and unfunded debt:		
(a) Payable in England	$154,105,123	
(b) Payable in Canada	68,586,890	
2. Miscellaneous	22,574,186	
3. Temporary loans	18,985,908	
Banking acounts	556,413	
Total gross debt		$264,808,520

ASSETS.

1. Investments:		
(a) On account of sinking fund	$ 15,777,973	
(b) Other investments	34,367,966	
(c) Bank deposits	130,000	
2. Miscellaneous	1,794,296	
3. Provincial accounts	7,501,548	
4. Banking accounts	8,664,954	
Total assets		$ 68,236,705
Total net debt		$196,571,785

The Provincial indebtedness allowed under the Union Act and by subsequent Acts of the Federal Parliament, relieving the provinces of their total pre-confederation indebtedness, is as follows:—

Province of Canada, 1867	$ 62,500,000	
Nova Scotia, 1867	8,000,000	
New Brunswick, 1867	7,000,000	
Nova Scotia, 1869	1,186,756	
Manitoba, 1870	472,090	
British Columbia, 1871	1,666,200	
Prince Edward Island, 1873	4,927,060	
All the provinces under Act 1873	13,386,989	
" " " " 1884	7,172,297	$106,311,392
New indebtedness since Confederation		$ 90,260,393

This new indebtedness has been created by expenditure on account of public works, upon which the following sums (since 1867) have been expended up to 30th June, 1885:—

On the canal system	$ 28,543,078
" " railway "	92,575,599
" light-houses and navigation	8,433,100
" acquisition and development of the North-West	5,356,035
" government buildings and miscellaneous	12,432,825
Total	$147,340,697

Thus, the people of Canada, since 1867 have not only increased their public debt by the sum of $90,000,000, but have paid out from their own resources the sum of $57,000,000, to facilitate the construction of these public improvements.

The total amount expended on these, prior to Confederation, was: on railways and canals, $52,944,175; public works, $10,690,917, making a total expenditure of $210,975,789.

In addition to the amounts thus expended, the Government of Canada have loaned various sums of money in aid of enterprises more or less national in character. These sums are included in the "other investments" given in the assets. The principal are:

Loan to Canadian Pacific Railway at 4 per cent *....	$20,000,000
" " " " " " †....	9,880,912
" to Quebec Harbour Commissioners (bonds)....	1,955,000
" for improving the St. Lawrence.....	2,190,000
" graving dock (Quebec).....	672,000
" St. John River and railway extension.....	278,800
" Northern Railway (bonds).....	73,000
" Montreal Harbour Commissioners.....	76,000

These assets yield on an average $3\frac{3}{4}$ per cent. interest to the Government.

Besides the amounts expended on Government railways, and in loans to various enterprises, the Government of Canada has given bonuses to railways, other than the Canadian Pacific, to aid in their construction. Up to June 30th, 1885, the amount thus paid was $611,245.

The rate of interest paid on the net debt in 1867 averaged $5.40 per cent. In 1885 the average interest paid was $3.80 per cent. The various financial re-arrangements, made since the Union, have resulted in a reduction of $1.60 per cent. in the rate of interest.

It is worthy of note that the public debt, unlike the national debts of most countries, has not been incurred for expensive wars, or other unproductive objects, but for the prosecution of works of a permanent character, rendered necessary from the fact that Canada has been obliged to keep pace with the progress in railways which has characterized her neighbors to the south, by which population has been enabled to find fresh fields for settlement far away from the rivers and streams along which settlement originally took its course.

It is also worth remembering in this connection that the ungranted and unpledged Crown Lands belonging to the Dominion would, at 3s an acre, pay the whole public debt.

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* This loan is secured to the Government by a deposit of $20,000,000 of the Company's first preference mortgage bonds, at present quoted at 104, and will be paid back to the Government by the 1st July, 1886.

† This loan is secured by a lien on the land grant of the Company, but arrangements have been made by which the Government give the Company a smaller land grant and extinguish the debt of the Company to the Government.

X.

REVENUE AND EXPENDITURE.

Under the Act of Union, all duties and revenues over which the Parliament of Canada has the power of appropriation are directed to be paid into the "Consolidated Revenue Fund." Included in this general fund is a specific fund, termed the "Consolidated Fund," which consists of the ordinary expenditure and income of Canada.

Under the general head of "Consolidated Revenue Fund," the accounts for Canada for the fiscal year ended June 30th, 1885, were :—

RECEIPTS.

Consolidated Fund	$32,797,002
Loans	44,145,515
Premium and discount loan account	140,483
Open accounts	1,335,844
Total	$78,418,844

EXPENDITURES.

Consolidated Fund	$35,037,060
Redemption	18,160,265
Premium and discount loan account	502,587
Railway subsidies	403,246
Open accounts	24,518,223
Total	$78,621,381

The revenue placed to account of the Consolidated Fund during the same year was, as stated in the general account, $32,797,002, and the expenditure $35,037,060. Of these receipts, Customs Duties amounted to $18,935,428, and Excise to $6,449,101. Other receipts, on account of this Fund, were $7,412,472. The expenditures consisted of charges for debt and subsidies to the Provinces, $15,248,356; ordinary expenditure (departmental), $12,591,827; charges on revenue, $7,193,876.

These receipts have been exceeded in some previous years. In 1883 the revenue was $35,794,650; customs yielding $23,009,582. In 1882 the revenue was $33,383,455, of which the sum of

$21,581,570 was from Customs. The receipts from Excise in the fiscal year ended the 30th of June, 1885, were the largest of any year in the history of Canada.

The receipts on account of land sales, which are credited to capital account, amounted in 1885 to $393,618 In previous years the receipts were: In 1877, $3,799; 1878, $19,424; 1879, $23,828; 1880, $120,479; 1881, $131,124; 1882, $1,744,456; 1883, $1,009,019; 1884, $951,636.

The falling-off last year is to be accounted for by the disturbed condition of the North-West, owing to the insurrectionary movement headed by Louis Riel, which, breaking out in March, affected the advance of settlement for the year.

The revenue derived from railways belonging to the Government was in 1885, $2,624,243, and the expenditure, $2,749,710.

It has been shown that, during the last fiscal year, the expenditure exceeded the revenue, the deficiency being $2,240,059. That deficit is largely caused by the extraordinary expenditure for the year occasioned by the Riel rebellion, the cost of which, included in the year's accounts, was $1,697,851. The following shows the relation of expenditure to income during the period of Confederation:—

	Receipts in excess of expenditure.	Expenditure in excess of receipts.
1868	$ 101,835	.....
1869	341,090	.....
1870	1,156,717	.....
1871	3,712,479	.....
1872	3,125,345	.....
1873	1,638,821	.....
1874	888,776	.....
1875	935,644	.....
1876	.....	$1,900,785
1877	.....	460,028
1878	.....	1,128,146
1879	.....	1,938,000
1880	.....	1,543,227
1881	4,132,743	.....
1882	6,316,352	.....
1883	7,064,493	.....
1884	754,256	.....
1885	.....	2,240,059

The proportion of the whole revenue paid into the Consolidated Fund, raised by taxation year by year since Confederation, is as follows:—

1868	85.49 per cent.	1877	80.22 per cent.
1869	77.28 "	1878	79.69 "
1870	84.30 "	1879	82,05 "
1871	84.45 "	1880	82.06 "
1872	85.52 "	1881	80.78 "
1873	84.64 "	1882	82.52 "
1874	83.12 "	1883	81.74 "
1875	83.60 "	1884	80.00 "
1876	82.41 "	1885	77.40 "

Taking Public Works, including Government railways, the receipts and expenditures have been as follows:—

	Receipts.	Expenditures.
1868	$ 901,466	$ 626,286
1869	918,933	692,853
1870	1,006,845	811,630
1871	1,146,240	831,072
1872	1,211,729	1,005,443
1873	1,316,636	1,496,185
1874	1,509,915	2,389,680
1875	1,432,360	2,139,573
1876	1,479,232	2,044,497
1877	1,807,076	2,351,832
1878	2,034,484	2,471,438
1879	1,863,149	2,680,979
1880	2,167,401	2,329,626
1881	2,682,924	2,703,666
1882	2,711,134	2,893,513
1883	3,101,134	3,264,877
1884	3,055,792	3,302,792
1885	3,065,502	3,270,810

The expenditure in 1885 on account of the Consolidated Fund by heads was as follows:—

Interest on Public Debt	$9,419,482
Charges of Management	232,641
Sinking Fund	1,482,051
Premium, Discount and Exchange	154,855
Subsidies to Provinces	3,959,327
Civil Government	1,139,495
Government of the North-West	95,316
Administration of Justice	627,252
Mounted Police, Water, and Parliamentary	621,286

Penitentiaries	287,552
Legislation	649,538
Geological Survey and Observatories	115,841
Agriculture and Statistics	91,381
Immigration and Quarantine	506,408
Marine Hospitals	55,391
Pensions, Superannuations, etc	293,515
Defences	2,707,758
Mail steamship subsidies	261,779
Public Works, including railways	2,388,389
Fisheries	273,174
Lighthouse and coast	532,446
Steamboat inspection	23,211
Insurance superintendence	10,223
Grants to Aborigines	1,109,604
Dominion Lands	178,727
Dominion Steamers	227,433
Investigation of wrecks, life-boats, registry of shipping, examination of masters and mates	14,760
British Association, Royal Society, International circum-polar observatories, Academy of Arts, Hudson's Bay expedition, etc	126,632
Miscellaneous	258,716
Charges on revenue:—	
Customs	791,538
Excise	309,268
Weights, Measures, and Gas	84,978
Inspection of Staples	848
Adulteration of Food	14,948
Culling timber	50,580
Post Office	2,488,315
Public Works, including Railways and Canals	3,448,593
Minor Revenues	4,818

It is noteworthy that the expenditure on account of Defences has increased from $550,450 in 1877 to $1,009,906 for ordinary Militia purposes. If we place under this head the expenditure incurred for the protection of the North-West, exclusive of the extraordinary one on account of the rebellion, Canada expended last year, for purposes of defence, the sum of over $1,500,000. To this extent the country seeks to keep itself in readiness to relieve the Mother Country of expense in time of peril to the Empire.

XI

TRADE AND COMMERCE.

The Canadian fiscal year ends on the 30th of June. In the fiscal year 1884–5, the declared value of goods imported into Canada was $108,941,486 and that of goods exported was $89,238,361. The excess of imports over exports was $19,703,125, and the total value of the external trade, $198,179,847, which is equal to $38.12 per head of the population. The exports were equal to $17.16 per head.

In 1885, the principal articles imported were: iron and steel manufactures, $11,657,189; cottons, $6,241,283; woollens, $9,053,626; raw materials, $20,035,767; silk manufactures, $2,305,168; metal manufactures other than iron and steel, $2,309,771. The value of the total import of manufactures of all kinds was $49,059,058. The imports of tea amounted to $3,573,330; of spirits and wine, to $1,512,695; of sugar above No. 9 Dutch Standard, to $1,811,365. In raw materials, the import of sugar, for refining purposes, was 134,531,895 pounds, valued at $3,225,070; that of hides and pelts, $1.788,914; of wool, $1,342,405; of raw cotton, 23,727,525 pounds, valued at $2,493,283.

The exports were as follow:—

———	Produce of Canada.	Produce of other countries.	Total.
	$	$	$
Produce of the mine	3,639,537	196,933	3,836,470
Fisheries	7,960,001	16,312	7,976,313
Forest	20,989,708	1,383,597	22,373,305
Animals and their products	25,337,104	1,166,890	26,503,994
Agricultural	14,518,293	4,602,073	19,120,366
Manufactures	3,181,501	612,728	3,794,229
Miscellaneous	557,374	101,113	658,487
Total	76,183,518	8,079,646	84,263,164
Coin and bullion	.....	.....	2,026,980
Estimated short returned at inland ports	.....	.....	2,948,217
Grand total	.....	.....	$89,238,361

It will be seen that the greatest exports were under the head of "animals and their products." A very considerable change has taken place in the proportions of each class of exports to the whole exports, since confederation. In 1868 the proportion was; agricultural products to domestic exports, 36.59 per cent; animals and their products, 14.24 per cent; forest products, 37.28 per cent; fisheries, 6.93 per cent; products of the mines, 2.98 per cent; manufactures and miscellaneous making up the remainder.

In 1882 the proportion was :—agricultural productions, 35.61; animals and products, 21.72; forest products, 26.57; fisheries, 8.17; and products of the mine, 3.42 per cent.

In 1885 the proportion was :—agricultural products, 25.08; animals and their products, 32.02; products of the forest, 24.06; fisheries, 9.13, and products of the mine,4.17 per cent.

The development of the exports of animals and their products is marked. Of cheese, Canada in 1868 exported 1,577,072 lbs.; in 1885 the export of that article produced in Canada, 79,655,367 lbs., valued at $8,265,240. The latest accessible returns for the United States, show that the export of cheese (in 1884) was 11,663,713 lbs. Canada in fact stands at the head of cheese exporting countries.

Of the export of Canadian cheese in 1885, 78,841,460 lbs. were sent to Great Britain.

Of eggs, Canada exported 11,542,713 doz.; chiefly to the United States.

The growth of the Canadian cattle trade may be gleaned from the following table of exports taken from the Trade Returns:—

Year.	Beeves.	Sheep.	Hogs.
1877	25,357	141,187	14,541
1876	22,656	209,899	2,063
1878	29,925	242,989	3,201
1879	46,529	308,093	6,803
1880	54,943	398,746	6,229
1881	62,277	354,155	2,819
1882	62,106	311,669	3,263
1883	86.396	308,474	3,868
1884	89,263	304,403	3,883
1885	143,003	335,043	1,652

The aggregate trade of Canada, on the basis of total exports and imports since confederation is exhibited in the following table:—

— —	Total exports.	Total imports.	Total exports and imports.
	$	$	$
1868	57,567,888	73,459,644	131,027,532
1869	60,474,781	70,415,165	130,889,946
1870	73,573,490	74,814,339	148,387,829
1871	74,173,618	90,092,971	170,266,589
1872	82,639,663	111,430,527	194,070,190
1873	89,789,922	128,011,281	217,801,203
1874	89,351,928	128,213,582	217,565,510
1875	77,886,979	123,070,283	200,957,262
1876	80,966,435	93,210,346	174,176,781
1877	75,875,393	99,327,962	175,203,355
1878	79,323,667	93,081,787	172,405,454
1879	71,491,255	81,964,427	153,455,682
1880	87,911,458	86,489,747	174,401,205
1881	98,290,823	105,330,840	203,621,663
1882	102,137,203	119,419,500	221,556,703
1883	98,085,804	132,254,022	230,339,826
1884	91,406,496	116,397,043	207,803,539
1885	89,238,361	108,941,486	198,179,847

Taking into consideration the fall in prices experienced during the whole of the year 1885, the exports of last year more than maintained their former record. Judging by quantities exported, Canada sent out a larger amount of her products than in previous years.

The imports have, however, decreased, even when due allowance is made for the reduction in prices which ruled throughout the world.

An analysis of the imports in 1885 and in 1875 will show the changes that have taken place:—

Imports by classes (home consumption.)

	1875.	1885.
Manufactures of iron and steel	$ 19,095,716	$ 11,657,189
" metals other than iron	1,491,384	2,309,771
" silk	2,219,160	2,305,168
" cottons	9,830,836	6,241,283
" woollens	12,767,575	9,053,626
All other manufactures	21,339,991	17,258,514
Total manufactures	66,744,662	49,059,058
Food and drink	29,042,973	18,089,941
Raw material	10,652,870	20,035,767
Coin and bullion	2,210,085	2,954,244
Miscellaneous	10,968,067	12,571,009
Total imports (home consumption)	$119,618,657	$102,710,019

There has been a decrease of $17,685,604 in the import of manufactured articles, and an increase of nearly $9,500,000 in the import of raw materials. There has also been a decrease in the importation of articles of food and drink, during the years compared, of $10,953,032. These figures accentuate the value to the country of the fiscal policy adopted in 1879 by the people of Canada. Situated side by side with the United States, Canada found itself exposed to two disturbing influences. When times were good in the United States, and the demand was equal to the supply, the policy of manufacturers and dealers in grain, etc., was to add something to the home market price, if the goods were wanted for the Canadian market. When times were bad, the United States manufacturers and others made a slaughter market of Canada, and poured their goods into the country, entailing ruin upon Canadian manufacturers and millers. Viewed broadly, the result was not beneficial to the Canadian consumer, for if he paid less in some years, he paid so much more in others that the average was against his pocket; while the oft-recurring disturbances prevented the application of capital to manufacturers in Canada. After mature deliberation and much discussion, the people of Canada arrived at the conclusion that it would pay the country to make provision, by legislation, against the evils experienced. A fiscal policy was arranged and put into operation in the spring of 1879. The effect is seen in the analysis above given. The prices of manufactured articles to the consumer have not increased. The products of the farm are not higher in price to the urban population. The manufacturer and the farmer retain possession of the market, and the industrial history of the country has ceased to be a record of a few successful years sandwiched between years in which failures in business were numerous.

The record of failures is good evidence of the important results which have followed from the success of the effort to minimize the injurious influence of our neighbors over our business.

In 1873 and 1874, which were good years in the United States, the failures in Canada numbered 1,960, with liabilities amounting to $20,030,000—an average of $10,000,000 a year.

In 1875-9, which were years of depression in the United States, the failures in Canada averaged $26,630,000 a year.

In 1880 the new fiscal policy went into full force in Canada. During the six years ended 31st of December, 1885, the average amount of yearly liabilities of insolvents was only $10,900,000, notwithstanding the fact that the last two years were years of great depression in the United States. The failures in 1884 covered liabilities of but $8,743,049.

The following analysis will show the commercial relations of Canada with Great Britain and other countries during the last decade:—

	Percentage of Canadian imports from:			Percentage of aggregate trade with:		
	Great Britain.	United States.	Other countries.	Great Britain.	United States.	Other countries
1876	43.00	48.63	8.37	47.39	43.25	9.36
1877	41.09	53.28	5.63	47.12	44.77	8.11
1878	41.04	53.33	5.63	48.89	43.32	7.79
1879	38.58	54.44	6.98	44.22	46.69	8.99
Average	40.93	52.42	6.65	46.90	44.52	8.57
1880*	48.08	40.88	11.11	50.29	39.26	10.45
1881	47.57	40.07	12.36	51.25	38.74	10.01
1882	44.91	42.87	12.22	44.64	44.80	10.56
1883	42.75	45.50	11.73	43.06	42.41	14.53
1884	40.13	46.67	13.20	41.94	42.98	15.02
1885	40.31	45.90	13.80	42.02	43.34	14.64
Average	44.00	43.60	12.40	45.53	41.91	12.56

Under the new tariff Canada has broadened the area from which she draws her supplies. During the four years, 1876-79, she obtained but 6,65 per cent. of her imports from countries outside of Great Britain and the United States. During the period 1880-85, the average of her imports from countries other than the two named was 12.40. At the same time the percentage of total imports from Great Britain has increased during the period 1880-85, and that of total imports from the United States decreased. It may therefore be said generally that the effect of the new tariff has been to decrease Canadian imports from the United States by about 9 per cent., and to distribute that amount between Great Britain and "other countries."

* New tariff in force.

The proportions of dutiable and free goods imported by Canada from Great Britain and the United States of America are as follow:—

	From Great Britain.		From the United States.		From other countries.	
	Dutiable.	Free.	Dutiable.	Free.	Dutiable.	Free.
1876	79.81	20.49	46.31	53.69	82.21	17..19
1877	83.19	16.81	45.86	54.11	81.41	18.59
1878	85.86	14.14	48.25	51.75	81.17	18.83
1879	87.34	12.66	54.31	45.69	91.77	8.23
Average	83.92	16.08	48.68	51.32	84.14	15.26
1880*	81.39	18.64	66.67	33.33	82.49	17.51
1881	82.27	17.73	69.83	30.17	89.44	10.56
1882	81.94	18.06	68.22	31.78	81.07	18.93
1883	78.25	21.75	68.98	31.02	81.07	18.93
1884	75.60	24.40	70.89	29.11	79.77	20.23
1885	74.14	25.26	66.22	33.78	80.01	19.99
Average	78.92	20.97	68.46	31.53	82.30	17.70

Two results which have followed the adoption of the present tariff are expressed in the above table. First, the dutiable goods from Great Britain have decreased, while the goods admitted free of duty have increased. Second, the dutiable goods imported from the United States have increased twenty per cent., while the goods admitted free of duty from that country have decreased nearly twenty per cent. The toll Canada imposes on her imports from the Mother country has decreased 5 per cent., while that she imposes on United States' goods has increased 20 per cent.

EXPORTS OF CANADA.

Being goods produced in Canada for the year ended June 30th, 1885:—

THE MINE.

	VALUE.		VALUE.
Coal	$1,468,166	Salt	12,326
Gold	999,007	Antimony	33,700
Copper	246,230	Other minerals	385,746
Iron	132,074		
Phosphates	362,288	Total	$3,639,537

* New tariff in force.

THE FISHERIES.

$7,960,001

ANIMALS AND THEIR PRODUCTS.

	VALUE.		VALUE.
Animals	$10,376,235	Hides and Skins	601,111
Meat	854,145	Wool	196,178
Butter	1,430,905	Sundries	154,892
Cheese	8,265,240		
Eggs	1,830,632	Total	$25,337,104
Furs	1,626,826		

THE FOREST.

	VALUE.		VALUE.
Ashes, pot and pearl	$ 172,935	Shingles	183,732
Fine wood	316,647	Railway sleepers	197,826
Lumber, deals, battens, planks	15,668,044	Square timber	3,414,286
Logs	225,858	Other products	746,909
Masts and Spars	42,461	Total	$20,989,708

AGRICULTURAL.

	VALUE.		VALUE.
Barley and rye	$ 5,683,706	Peas	2,077,762
Flax	59,904	Seeds	116,267
Flour	556,530	Vegetables	309,874
Green fruit	635,240	Wheat	1,966,287
Hay	1,270,525	Other produce	418,229
Malt	280,137		
Oatmeal	250,319	Total	$14,518,293
Oats	893,513		

MANUFACTURES.

	VALUE.		VALUE.
Books	$ 155,511	Ships	246,277
Biscuits	18,936	Prepared tobacco	34,722
Carriages	17,765	Furniture, etc	685,999
Extract of Hemlock	203,211	Woollens and cottons	92,924
Iron and hardware	140,724	Musical instruments	144,505
Leather, boots and shoes, saddlery	513,380	Cordage	44,279
Liquors	13,172	Agricultural Implem'ts	22,640
Machinery	86,163	Other articles	642,062
Sewing Machines	69,235	Total	$ 3,181,505

The growth of the trade and commerce of the country since Confederation is seen in the statistics relating to banking, as given in the following table:—

YEAR	ASSETS.	LIABILITIES.	DEPOSITS.	NOTES IN CIRCULAT'N.	SPECIE.	DISCOUNTS.	RESERVE.
1868..	$ 77,872,257	$ 43,722,647	$ 32,808,104	$ 8,307,079	$8.879,814	$ 50,500,316	.....
1874..	194,579,450	122,031,485	81,366,965	29,046,273	7,354,993	133,731,260	.....
1877..	177,422,044	99,125,162	69,763.668	21,922,749	6,788,810	126,169,577	.....
1885..	222,091,270	141,713,644	106,752,992	31,334,621	6,826,337	158,209,174	$17,784,433

The paid up capital invested in banking on the 30th September, 1885, was $61,636,424.

In addition to the notes issued by the chartered banks, the Government issues notes of various denominations from fractional currency up to $1000, the issue of $5, $10 and $20 being small, so as to put practically into the hands of the banks the issue of notes of these particular denominations. In the years named, the issue of these Government notes on the 30th September was as follows:—1868, 4,205,000; 1874, $12,428,206; 1877, $11,395,548; 1885, $17,836,378.

Besides this circulation of notes of the banks and the Government of Canada, there are about $500,000 United States notes in circulation, during recent years. Canada requires, therefore, for the business wants of her people, the sum of $49,700,000.

XII

THE TRANSPORT SERVICE OF CANADA.

For fifty years, Canadians have kept before them an ideal Canada, to attain which they have made continuous and strenuous efforts.

That ideal comprised a British North America, united, instead of dissevered and antagonistic; expanded and broadened by the acquisition of the Hudson's Bay and North-West Territories, and bound together with a complete transport service through the agency of canals and railways, telegraph and steam-ship lines.

The idea of Confederation is as old as the century. It became

an accomplished fact less than 13 years ago, when Prince Edward Island cast in her fortunes with the Dominion.

The idea of the expansion of Canada by the acquisition of the North-West was originated at an early date and for many years formed a "stock" subject for newspaper discussion.

In 1835 Mr. Henry Fairbairn proposed a line of railway from Halifax, Nova Scotia, to the St. Lawrence River, as an imperative necessity, "if it is desired by the Imperial Government to maintain an equality of commercial advantage with the neighbouring United States; for the splendid advantages of the Railway System are well understood in that country, where great navigable rivers are about to be superseded by railways of vast magnitude" . . . . "If then," he added, "we would be content with these advantages in our North American provinces, it is only by similar works that we can bring to the Atlantic the agricultural products of the Colonies and secure the stream of emigration which otherwise, with the facility of inland transportation, will be rapidly diverted to the Western regions of the United States."

The idea of a transcontinental railway from ocean to ocean was mooted by Major Carmichael-Smyth in an open letter, which was addressed to Mr. Haliburton (author of "Sam Slick") and published in 1847. It was accompanied by a map of the route proposed by him, and, singular to say, the Canadian Pacific Railway takes the very route then suggested. The view he took may be gathered from a sentence, "This great national railway from the Atlantic to the Pacific is the great link required to unite in one powerful chain the whole English race, which will be the means of enabling vessels steaming from our magnificent colonies—from New Zealand, Van Diemen's Land, New South Wales, New Holland, from Borneo and the West Coast of China, from the Sandwich Isles and a thousand other places—all carrying the rich production of the East, to land them at the commencement of the West, to be forwarded and distributed throughout our North American provinces and delivered within thirty days at the ports of Great Britain."

Encouraged by the success of his efforts to stir the few to whom this letter to the renowned "Clockmaker's" author had been sent, he published a pamphlet bearing date February, 1848, in which

he elaborated the views contained in his letter. The title is an argument in itself. It reads as follows:

"The employment of the people and the capital of Great Britain in her own colonies, at the same time assisting emigration, colonization and penal arrangements, by undertaking the construction of a great national railway between the Atlantic and Pacific, from Halifax Harbour, Nova Scotia, to Fraser's River, New Caledonia."

Like Mr. Fairbairn, Major Carmichael-Smyth proposed to make the construction of the railway subsidiary to a grand scheme for the settlement of the regions traversed by it, in the interests of the Empire at large, as well as in those of Canada. Had these far-seeing plans been taken up when mooted, Canada would have been at least two generations in advance of her present position, whilst "Greater Britain" would have been in a much higher state of development than it is.

The idea of a trans-continental railway, which apparently created no lasting impression in England, took root in the Canadian mind. The railway, though at first thought chimerical, then regarded as feasible but impossible for Canada owing to the cost, was at length undertaken and finished in four years (4) and nine months, from the day on which the contract with the Canadian Pacific Railway Co. became law.

Our ideal Canada is not yet completely realized. An air line railway connecting Montreal with the Atlantic Ports of St. John and Halifax is desirable. Appropriations have been made for it by the Parliament of Canada. A contract has been signed with responsible parties, interested in the Canadian Pacific Railway, with which the road when finished will be amalgamated; thus adding about 560 miles to the Canadian Pacific Railway. On its completion, Montreal, as the *entrepot* between the wheat fields of the West and the Atlantic, will be placed under the most favourable circumstances both for summer and winter trade.

The ideal Canada will become an accomplished fact when, under the perfected arrangements of transport, Canada succeeds in attracting the population of Europe and filling up her broad acres with a prosperous people—a source of strength to the empire.

Holding these views and "showing their faith by their works" Canadians take pride in their achievements in railway building and canal construction, which must be the apology for a somewhat extended description of our transport system.

The Railways of Canada.

The development of our present railway system, of over 11,000 miles in length, synchronises with the political life of the present Premier of Canada, Sir John Macdonald, for, upon his entrance to public life (1844) there were but 14 miles of railway in operation. In 1849 a general Act was passed by the Legislature of the Province of Canada, known as the Guarantee Act, which empowered the Government to aid any railway not less than 70 miles in length by guaranteeing the interest at 6 per cent. per annum for a term of years. This gave indirectly a powerful stimulus to railway construction, and the first series of railways owed their development to it. In 1850 Nova Scotia commenced an agitation for the Intercolonial Railway, under the guidance of the Hon. Mr. Howe.

In 1852 the Grand Trunk Railway was incorporated and was built between 1852 and 1858, during which period, the Great Western, Northern, Buffalo and Lake Huron, Cobourg & Peterboro', and a number of other railways were so successfully prosecuted that by the end of 1859 there were 1,888 miles of railway in Upper and Lower Canada. In the Eastern provinces, three lines of railway, covering 266 miles, were completed; thus, at the beginning of 1860, there were 2,054 miles in all Canada.

During the ten years, 1860-70, there was little if any increase in railway mileage in the two provinces of Upper and Lower Canada.

The statistics of railways opened in Canada at the time of Confederation (1867) are as follow:—

Name.	Miles.	Expenditure by Government.	Expenditure from other sources.	Total cost.
		$	$	$
Grand Trunk	905	15,142,633	69,092,765	84,235,398
Montreal and Champlain	83	.....	2,417,680	2,417,680
Buffalo & Lake Huron	160	.....	8,000,780	8,000,780
Great Western	363	2,810,500	21,966,930	24,777,430
Northern	95	2,311,667	3,146,122	5,457,789
London & Port Stanley	24	.....	1,032,850	1,032,850
Cobourg & Peterboro'	32	.....	900,000	900,000
Erie & Ontario	17	.....	300,000	300,000
Ottawa and Prescott	54	.....	2,008,994	2,008,994
Carillon & Grenville	13	.....	98,761	98,761
St. Lawrence & Industry	12	.....	54,100	54,100
Port Hope & Beaverton	56	.....	1,993,580	1,993,580
Welland	25	.....	1,622,843	1,622,843
Brockville & Ottawa	87	.....	2,647,004	2,647,004
Stanstead, Shefford & Chambly	43	.....	1,216,000	1,216,000
St, John & Shediac	148	4,073,385	.....	4,073,385
St. Andrew's & Quebec	99	110,000	2,000,000	2,110,000
St. Stephen's Branch	19	190,000	110,000	300,000
Nova Scotia	145	6,781,254	.....	6,781,254
Total for all Canada	2,380	$31,419,439	$118,608,417	$150,027,856

Under the Act of union, the Intercolonial Railway was begun by the Federal Parliament and completed in 1878. The Federal Government also own the railway in Prince Edward Island. In all, the railways owned by the Dominion Government have a length of 988 miles. The amount expended in construction up to the 30th June, 1885, is $47,281,951.

The latest addition to the trunk lines of the country is the Canadian Pacific Railway, extending from Quebec City to Vancouver on the Straits of Georgia, separating Vancouver Island from the mainland of British Columbia.

This line, with the Intercolonial, forms an imperial work of great importance, not only to Canada but to the British Empire. The imperial character of the great line which thus joins the one ocean to the other warrants a fuller statement of the views entertained of its great value. It is the future highway between Great Britain and most of her important colonies in the Pacific Ocean. It is the shortest and best route from England to China, Australia and New Zealand, and over the road, in the near future, must military and postal communications be maintained between the Home Government and its leading dependencies. The necessity for the maintenance of such expensive posts as Gibraltar, Malta and Aden seems largely cancelled by the opening of a route all the way over British territory, far removed from hostile surroundings, and requiring no coaling stations nor fortifications on exposed and isolated promontaries, in time of war, involving enormous outlay for their protection and maintenance. It was a singular coincidence, and perhaps a prophetic omen of the future imperial importance of this railway, that the first loaded train that passed over its entire length, from ocean to ocean, was freighted with naval stores, belonging to the Imperial War Department, transferred from Quebec to Vancouver. It was a remarkable commercial incident that the first car of ordinary merchandise consigned to British Columbia was a cargo of Jamaica sugar, refined in Halifax, and sent overland to the Pacific terminus, nearly 4,000 miles in one stretch under the flag of Great Britain.

Although we all know that the surface of the globe is spherical, in judging of distances and directions the mind generally follows the older theory of its being a plane; for which reason

we often estimate the positions and the shortest courses between places very erroneously, and the wider they are apart the more liability there is to judge very imperfectly of their relative position. The popular idea no doubt is that the St. Lawrence, with a general south-west bearing, has its mouth altogether too far North of the proper course to form an advantageous route to China or the East Indies, much less to Australia or New Zealand; yet Quebec is 5 degrees south of London, England, and 2 degrees south of Victoria, in British Columbia, and the Canadian Pacific follows the 46th parallel of latitude very nearly for a thousand miles west from Quebec, and then, rising to the 50th degree to go north of Lake Superior, runs south of that in its course west to the Pacific. The general idea is that Canada is too far north for the air line distance to Japan or the East, and that New York and San Francisco are more nearly in the direct route; yet Yokohama is 250 geographical miles nearer to Vancouver than to San Francisco. From Vancouver to Montreal, in an air line, the distance is 236 miles less than it is between San Francisco and New York; whilst the distance from Liverpool is 200 miles less to Montreal than it is to New York. It is nearly 700 miles in an air line nearer from Yokohama to Liverpool by way of Montreal than it is by New York. Taking the shortest railway route across the continent from New York to San Francisco, as actually constructed, there is an advantage of nearly 1,000 miles by the Canadian route. This is a matter of so much importance that it is worth a little more consideration.

The great circle air-line distance from Yokohama to San Francisco, by the latest maps published, is 4,470 geographical miles, and to Vancouver, the Pacific terminus of the Canadian railway, 4,232 miles. At 15 knots per hour, to steam these distances would require 298 hours and 282 respectively, or 12 days and 10 hours against 11 days and 18 hours.

From San Francisco to New York by the shortest railway route through Omaha and Chicago the distance is 3,271 statute miles, against 2,906 miles by the Canadian route to Montreal, or 3,053 miles to Quebec. At 35 miles an hour it would require $93\frac{1}{2}$ hours by the American line, and 87 by the Canadian line, supposing the circumstances to be the same in the two cases. But there is a long ferry from San Francisco of 5 miles, and there are heavier grades and greater altitudes, up which the trains have to be

lifted, and delays at important stations, make it impossible to work the American through line as expeditiously as the Canadian. Taking the actual running time made by the fastest service between New York and San Francisco, there is a difference of 50 hours between the two railways, or 137 hours against 87. In winter the difference will be even greater, long lengths of the American line, aggregating one-half of the distance between Omaha and the Pacific, being at an elevation of 5,000 feet above the sea, 500 miles being over 6,000 feet, and 400 miles over 7,000; whilst the Canadian route has a summit nearly 3,000 feet lower than its rival, crossed in a very few miles. Quebec, again, is 2,661 geographical miles from Liverpool; New York is 3,130,—a difference of 469 miles, which at 15 knots requires 31 hours. There is thus a total saving of 16 hours on the Pacific Ocean, 50 hours on the inter-oceanic railway, and 31 hours on the Atlantic, or a total of four days and one hour. Putting the figures of time and distance together we have as follow:—

IN DISTANCE.	PACIFIC OCEAN.	RAILWAY.	ATLANTIC.	TOTAL.
By San Francisco and New York...	4,470	3,271	3,130	10,871
By Vancouver and Quebec..... ..	4,232	3,053	2,661	9,946
Saving in miles....	238	218	469	925

IN TIME.	PACIFIC OCEAN. DAYS.	RAILWAY. DAYS.	ATLANTIC. DAYS.	TOTAL. DAYS.
By San Francisco and New York...	12.10	5.17	8.16	26.19
By Vancouver and Quebec.....	11.18	3.15	7.09	22.18
Saving in time.....	.16	2. 2	1.07	4. 1

This is taking our summer route by Quebec and the Straits of Belle Isle. In the spring, vessels usually go south of Newfoundland which is 158 miles longer, or ten and a half hours; whilst in

winter the route of the future may possibly be by Louisburg, which, when the short line from Montreal is complete, would make the winter route 600 miles longer by railway and 310 miles less by water than the shortest route by Quebec, or, as compared with New York, 250 miles more of railway and 750 miles less on the Atlantic, a change that in winter would certainly not be disliked by the majority of travellers. If the same speed be assumed of 15 knots an hour, the Louisburg route would save 52 hours as compared with New York for the Atlantic trip alone, and still more if, as it usually happens, the speed be reduced during the rough weather in winter. On a recent trip of the "Etruria" the vessel maintained an average speed of 18½ knots an hour for the whole distance there and back, whilst 17 knots is an ordinary speed for any of the new fast steamers. At this latter rate the distance from Liverpool to Louisburg may be made regularly in five and a half days, and the railway trip of 3,620 miles would be done in four days, or together, nine and a half days from Liverpool to the Pacific, which is less time than steamers now take in reaching Suez. To Yokohama, in Japan, at the same speed as calculated for the Atlantic, (and now generally attained) it would occupy ten and a half days, or twenty days altogether from Liverpool to Yokohama, instead of the 55 days at present taken by vessels passing through the Suez Canal, whilst the distance is 1,500 miles less; or 56 days, by Panama, a route 2,700 miles longer than the Canadian line.

The Panama route will never be a very serious competitor with the Canadian Pacific. The distance from Southampton to Colon or Aspinwall, 4,820 miles, is too long for fast steamers to run without re-coaling, and the time required, even at 16 knots an hour, (which it is difficult to maintain on so long a run) would be twelve and a half days. The canal, when finished, with the delays of entering and waiting for the vessel's turn, will occupy another 24 hours, so that even the fastest vessels would be thirteen and a half days before getting fairly under way on the Pacific, which is three days longer than by the Canadian route. To Australia the present mail service is either by the Suez Canal, Colombo and Mc' ourne; by Panama, Auckland and Sydney; or by San Francisco and Honolulu. By the Suez Canal, steamers take thirteen days to Port Said and at least two to Suez. The mails go either by Marseilles, overland, or to Brindisi. By the latter,

the quickest route, it is 1,391 miles from London to the Italian port and occupies 56 hours; thence to Alexandria is 75 hours, and by rail to Suez 200 miles, occupies ten hours. To Aden, 1,308 miles, through the scorching heat of the Red Sea, is nominally 119 hours, and to Colombo, 2,093 miles, occupies 180 hours, or say, with delay at Aden, thirteen days from Suez to Colombo which is another coaling station, and delay. From Colombo to King George's Sound, 3,390 miles, occupies fourteen days, and forward to Melbourne, 485 miles, takes two days more. In 1882 the average time from London to Melbourne was 950 hours, (39 days, 14 hours) the return trip occupying 973 hours, (40 days, 13 hours) except during the Monsoons, when it was 42 days, 13 hours. To Sydney, the shortest time in both directions, was 42 days. By Panama, the time is given at 44 days out and 46 days home. *Via* San Francisco, the distances and time taken are as follow:—

	MILES.	TIME.
Liverpool to New York	3,130	9 days.
New York to San Francisco	3,271	7 "
San Francisco to Honolulu	2,092	8 "
Honolulu to Auckland	3,833	14 "
Auckland to Sydney	1,276	4 "
Totals	13,602	42

From Vancouver, as compared with San Francisco, the distance and time on the Pacific would be about the same, but there is a gain of three days to Vancouver, and by putting on faster steamers on the Pacific, the distance, which in a direct line is about 6,800 miles to Sydney, should be done, including coaling, in 18 days, or say 29 days altogether from London to Sydney.

The Panama route to Australia, as compared with the Canadian line is about 1,100 miles longer on the Pacific, and 2,150 more on the Atlantic, but the time at the same speed for the steamers, 15 knots, would be 35 days, to which 2 added for passing through the canal and coaling, would be 37, as against 29 by Canada, the total distance being about 12,500 by Panama against 12,300 by Canada, the saving being by railway instead of steamer speed. There is, however, one important consideration in connection with the ocean route between Great Britain and the East, or even Australia, that gives the Northern route such

an advantage that the Canadian Pacific ought to distance all its rivals. From England to Colombo, Panama, Calcutta, or even Hong-Kong, no coal is found available for the steamers until the English coal comes within economical distance of the Australian fuel, and, whether the steamer carries it herself, or it is carried for her by chartered vessels, every pound of the fuel she uses has to be transported 1,150 miles to Gibraltar, 2,130 miles to Malta, 2,950 miles to Alexandria, 4,510 miles to Aden, or 6,650 miles to Colombo, at a rapidly increasing cost for her consumption as she proceeds on her way from England. By the Canadian route, 2,350 miles from Liverpool the steamer reaches Louisburg, the port of shipment of one of the largest coal deposits in the world, where her fuel will cost probably two shillings per ton less than in England. At Vancouver she starts again from a point which actually overlays a coal-bed of equal area and value, and where again her fuel will cost as little and require actually less handling than in the Mersey. At Sydney, Australia, she reaches a third coal field that challenges comparison for excellence or economy with either of the others. In times of peace this is a wonderful provision, which seems to mark the Canadian route as the future line of the world's commerce. In time of war, it means much more than this; and the time may come when the difficulty and expense of maintaining the different coaling stations in the Mediterranean, Red Sea and Indian Ocean may suggest the advisability of keeping the main stream of our commerce on lines where expensive, outside coaling stations are unnecessary, and where our men-of-war on the Atlantic, the North or South Pacific, may find just as secure a harbour as can be found in any foreign land, with a colliery at the back of it, on British soil. The coal bill is still the heavy expense in ocean steaming; the time has not yet arrived when great speed is not almost synonymous with heavy consumption of coal, and one of the main reasons why the steamers on the Eastern Ocean are so slowly worked, as compared with the Atlantic, is that, on long voyages, economy of coal must be a prominent consideration, and that speeds obtained nearer home would be ruinous where coal costs from 40 to 60 shillings per ton, and where two or three knots per hour, extra, doubles the consumption.

The general statistics of the railways of Canada are as given below:

At the end of 1876 the mileage, was 5157 miles and the increases each year to June 30th 1885 have been

Year.	Yearly Increase.	Total.
1877	417 miles	5574
1878	569	6143
1879	341	6484
1880	407	6891
1881	369	7260
1882	270	7530
1883	1196	8726
1884	849	9575
1885	1198	10773

The amount of capital stock, bonds, municipal and government bonuses invested in the different railways were :—

Year.	Amount Yearly.	Total.
	$	$
1876	.....	323,232,311
1877	12,064,069	335,296,380
1878	14,067,070	349,963,450
1879	1,468,951	351,432,402
1880	19,618,790	371,051,192
1881	18,234,507	389,285,700
1882	26,326,109	415,611,810
1883	85,123,825	500,753,635
1884	56,879,434	557,615,069
1885	68,139,635	625,754,704

The nominal capital here given up to June 1885 is divided as follows :—

Ordinary Share Capital paid up	216,425,492
Preference Stock do	95,756,670
Bonded Debt do	141,370,963
Aid from Government	140,062,024
Aid from Municipalities	12,472,450
Other sources	19,667,102
	$625,754,704

The train mileage run during the year was 30,623,689 miles. The number of passengers carried was 9,672,599, and of tons of

freight 14,659,271. There are about 1,100,000 tons of steel and 250,000 tons of iron rails in service.

The earnings of the railways for the fiscal year 1884-5 were $32,227,469 and the expenses $24,015,321. Compared with the fiscal year 1883-4, the train mileage of 1884-5 was about a million miles more, the passengers nearly 300,000 less, the tons of freight over 370,000 more; while the earnings were somewhat over $1,000,000 less than in 1884-5, the operating expenses were about $1,500,000 less.

The amount contributed by the people of Canada in aid of railway development is large. While yet a people in the gristle, to use Edmund Burke's expression, the Government gave fifteen millions of dollars in aid of the Grand Trunk. Since 1881, the Federal Government have given $74,500,000 to the Canadian Pacific. Other roads have been subsidized with considerable sums of money and acres of land. The Provincial Governments have also aided railways to the amount of $19,137,720. The municipalities have paid $12,472,450 to secure railway communication. In all, up to June 30th, 1885, the Government and Municipal aid actually paid amounted to $171,672,200, while further liabilities amounting to nearly $20,000,000 remained at that date unpaid, fifteen millions being the Federal Government share. The greater portion of this latter amount has since been paid. So that up to date it may be said that $187,000,000 have been contributed by the Governments (Federal and Provincial) and by the Municipalities towards the construction of the 13,000 miles of railway within the Dominion. This is equal to an average of $16,500 a mile.

The prospects of railway extension and development in Canada are at the present time very hopeful.

The Ontario system of railways has been recently connected at Lake Nipissing with the Canadian Pacific Railway, and from other points on the St. Lawrence River between Lake Ontario and the Ottawa River, railways are in progress to tap the same main line, and to connect it with railways centering in New York.

There are also railway projects to connect James Bay, the Lake Temiscamingue, the Gatineau Valley and the Lake St. John regions with the Canadian Pacific, thus utilizing large tracts of fertile country, whose distance from existing centres of popula-

tion has rendered them useless for settlement, though their value has been generally recognized.

In the Island of Cape Breton there is also activity in railway enterprise, the purpose being to connect Louisburg, once the great French Arsenal at the entrance of the Gulf of St. Lawrence, with the Straits of Canso, thence across the country by direct line to Montreal.

In the Province of New Brunswick there is also great activity both in lines under construction, and lines projected all connecting either with the existing Intercolonial main line or with the proposed "short line" to Montreal. When all are finished, that province will be as fully equipped as any part of the American Continent.

In Manitoba and the North West Territories branch feeders of the Canadian Pacific Railway have been begun, North and South, and considerable mileage has been already constructed. The purpose of the promoters of these lines is to connect the North Saskatchewan Valley with the Canadian Pacific to the North, and the rich coal fields at Lethbridge, to the South. Another railway to which public attention has been directed is the Winnipeg and Hudson Bay railway designed to connect Lake Winnipeg with Hudson Bay, near Fort Churchill.

During the present session of Parliament charters have been sought for railways, opening up two of the many important valleys of British Columbia—the Kootenay Lake and the Okanagan Lake regions in connection with the main line of the Canadian Pacific Railway. Communication is also proposed by means of the extension of the Algoma branch of the Canadian Pacific to that part of the State of Michigan lying directly south of Lake Superior, and Minnesota and other Western States.

During this session of Parliament twenty-two charters of incorporation have been applied for by Railway Companies.

The latest returns supplied the Government are down to June 30th 1885. Still later private returns are down to 31st Dec. last. By these the total Railway mileage is show to be 11,275 miles—an increase since the official returns were last presented of 868 miles of which the Canadian Pacific has contributed 428 miles, the Northern 110 and the three lines previously mentioned in the North West 154, the remainder being distributed amongst all the provinces.

WATER WAYS.

The Dominion is well supplied with natural means of intercommunication.

The water-ways which pierce the country in every direction have already been mentioned. In addition to these, the Government has undertaken the construction of a system of canals intended to overcome natural barriers to free communication. Much time and money have been expended also upon the improvement of rivers, the most noticeable effort in this direction being the improvement of the St. Lawrence, a short account of which will show the energy and enterprise of the people of Montreal.

Improvement of the River St. Lawrence Between Montreal and Quebec.

The River St. Lawrence from the Gulf of St. Lawrence to the immediate vicinity of the city of Quebec is from 10 to 35 miles in width, of great depth, and possesses every natural advantage for navigation by vessels of any size.

From Quebec to Montreal, a distance of 159 English miles, the river is generally from one to two miles in width, with a depth of forty-five to one hundred feet for a distance of 45 miles above Quebec, ; above that, except in shoal places, it is of a depth of 30 to 50 feet.

At above two-thirds of the distance above Quebec, the river widens out into the Lake St. Peter, which is 20 miles in length by 9 miles in width and with a general depth of only 11 to 18 feet at lowest water.

The tide, which rises 14 feet at Quebec, is gradually lost in ascending, until it becomes imperceptible at the lower end of Lake St. Peter. The average current of the river between Montreal and Quebec may be taken at 2 miles per hour and is nowhere sufficient to affect navigation.

From Montreal to Lake Ontario, a distance of 183 English miles, the lower 100 miles is broken by rapids, which are overcome by a system of canals with locks enabling the vessels of the great lakes to descend and exchange cargoes with the sea-going vessels below.

At several places between Quebec city and Montreal there were shoal places preventing large vessels from reaching the latter city. In the aggregate, these shoals were 39.25 miles, divided

among twenty different places, the widest being in Lake St. Peter (17.47 miles). They were composed of gravel, sand, clay, boulders and shale rock.

Work was begun in Lake St. Peter in 1844, the purpose being to dredge out a straight channel. This purpose was subsequently abandoned and the work suspended in 1847, after an expenditure of $287,629. In 1851 dredging was begun in the present ship-channel, which follows the deflections of the natural channel and takes advantage of the pools of deep water existing.

By 1869 the increase of depth effected was 9 feet, giving a 20 foot channel to Montreal. The completion of this channel marked an important era in the history of the St. Lawrence route. The success of the work amply demonstrated that the St. Lawrence could be made available up to Montreal for navigation by the largest class of ocean merchant-ships, and the extraordinary increase of Canadian commerce that attended the improvement of the channel showed how imperatively it was demanded by the trade of Canada. The increase in trade and in the size of ocean steamships necessitated a further deepening of the channel. By 1878 the depth was 22 feet; by 1882 it was 25 feet, and by the end of last season (1885) it was 27½ feet; the total cost, including the expenditure on the abandoned "straight channel," up to 31st December, 1885, has been $3,503,870 (£720,960) and the total quantity of dredged matter, 15,230,736 cubic yards.

In the straight part of the channel, the dredging is from 300 to 325 feet wide, but in other parts it is widened to 450 feet or more.

This work has made Montreal remarkable from the fact that it is a fresh water sea-port frequented by the largest craft, nearly 1,000 miles inland from the Atlantic, 250 miles above salt water, and nearly 100 miles above tide. In the bottom of a lake whose water was from 11 to 18 feet deep upon the flats, a submerged canal has been excavated, entirely by steam, 17 miles long and with sides, in the worst places, over 16 feet high.

The Canal Systems of Canada.

The canal systems of Canada under Government control in connection with lakes and rivers are as follows:—

1st. The River St. Lawrence and lakes.

2nd. The River Ottawa.

3rd. The Rideau navigation from Ottawa to Kingston.

4th. The Trent navigation.

5th. The River Richelieu from the St. Lawrence to Lake Champlain.

6th. St. Peter's canal, Bras d'or Lake, Nova Scotia.

The River St. Lawrence, with the system of canals established on its course above Montreal, and the lakes Ontario, Erie, St. Clair, Huron and Superior, with connecting canals, afford a course of water communication extending from the Straits of Belle Isle to Port Arthur at the head of Lake Superior, a distance of 2,260 statute miles.

When this system of canals was designed, it was in contemplation to afford a depth, at all stages, of the St. Lawrence waters of nine feet—a depth, seemingly, from the data then possessed, secured through the works proposed. The River St. Lawrence is, however, from various causes, subject to fluctuations, the extent of which it was impossible, at the time when these canals were originally constructed, to arrive at with precision, and the continued observations and experience of subsequent years have shown that, while the intermediate river-reaches at all times afford ample depth for vessels of nine feet draught, in the canals themselves, at certain periods of low water, this depth cannot be maintained, the bottom not having been sunk to a sufficiently low level.

In the year 1871 it was decided to enlarge the canals on the St. Lawrence route, in order to afford a navigable depth of twelve feet throughout. Subsequently, however, it was decided that the depth should ultimately be increased to accommodate vessels of 14 feet draught; and accordingly, in the scheme of enlargement which has so far been carried out, while at present a channel-way in the canals is provided for vessels drawing twelve feet only, all permanent structures, locks, bridges, etc., are built of such proportions as to accommodate vessels of 14 feet draught, the locks being 270 feet long between the gates, 45 feet in width and with a clear depth of fourteen feet of water on the sills.

Starting from Montreal the first canal reached is the Lachine, which extends from that city to the village of Lachine, overcoming the St. Louis Rapids, the first series of rapids which bar the ascent of the River St. Lawrence. They are 986 miles distant

from the Straits of Belle Isle. This canal is $8\frac{1}{2}$ statute miles in length.

The Beauharnois canal commences on the South side of the St. Lawrence, 15 miles from the head of the Lachine canal. It connects lakes St. Louis and St. Francis and passes the three rapids known as the Cascades, the Cedars and the Coteau. The length of this canal is $11\frac{1}{4}$ statute miles.

From the head of the Beauharnois to the foot of the Cornwall canal, the next in order, there is a navigable stretch through Lake St. Francis of nearly 33 miles, at the end of which are the Long Sault Rapids, past which extends the Cornwall canal, $11\frac{1}{2}$ miles in length. Five miles from the head of the Cornwall, Farran's Point Rapid is overcome by a canal $\frac{3}{4}$ of a mile in length. Ten miles beyond, the Rapide Plat canal, 4 miles long, enables vessels to avoid the Plat Rapids. Five miles more, and the ascending vessel reaches the Galop's Canal, $7\frac{5}{8}$ miles long.

Between Lakes Ontario and Erie, the great barrier of the Niagara Falls and rapids is encountered. To overcome this, the Welland Canal was devised. It is $26\frac{3}{4}$ miles long and has 27 locks rising to an upper level of 300 feet. It was commenced in 1824, opened partially in 1829, and wholly in 1832. Its enlargement was begun in 1841, owing to the fact that the size of vessels had so increased that more than one-half the vessels navigating the lakes were unable to pass through the canal. The first enlargement was no sooner completed than it was found necessary to increase the depth of water, as the vessels continued to increase in size. In 1859, the St. Lawrence route not maintaining its share of the Western trade and of the grain trade in particular, inquiries were instituted into the causes of diversion to rival routes. In the report, it is stated that of the number of vessels engaged in the grain trade of the lakes, one-fourth to one-third could pass through the Welland Canal, while nearly three-fourths of the propellers on the upper lakes, the class of vessels chiefly used in the grain trade, were too large to pass down to Lake Ontario, "and if it should be shown that the predominating cause of the diversion of trade is due to the fact that the size of the locks is not adapted to the class of vessels in use on the upper lakes, the enlargement of the Welland Canal would seem to be as much a matter of necessity as was its original construction." The second enlargement was begun in 1872, and though

but partially finished, it has resulted in admitting to the carrying trade between the upper lakes and Lake Ontario a number of sailing vessels and propellers, too large to navigate the old canal and too small to compete with the larger carriers. During the present month, February, contracts have been let for the completion of the enlargement. The importance of the work to the empire is evident. Great Britain draws her food supplies from this continent through five great ports, Baltimore, New York, Philadelphia, Boston and Portland on the Atlantic sea-board, the latter port, however, relying chiefly upon Canadian grain. The object of the Welland Canal is to create a sixth port, in Montreal, from which grain can be shipped to Liverpool, thus giving the United Kingdom the advantage of a competitive route through British Territory.

The Erie Canal having been declared a free canal, the competition between it and the Welland has become keen, and an agitation has sprung up in favor of the abolition of tolls on the Canadian system. The well-known desire of Canadians to mark, in every suitable way, their appreciation of the benefits resulting from the connection of Canada with the United Kingdom, will doubtless carry the agitation to a successful issue.

The Welland canal has been, and remains, one of the great public works of Canada, though of diminished importance at present, owing to the development of railvays.

The Ottawa and Rideau system of canals has for its object the connection of Montreal, by the waters of the Ottawa, with Kingston on Lake Ontario.

The following table shows the intermediate distances from Montreal Harbour.

Sections of Navigation.	Intermediate Distances.
The Lachine Canal	8 and a half miles
From Lachine to St. Anne's Lock	15 " " "
From St. Anne's Lock to Carillon canal	27 " " "
The Carillon canal	$\frac{3}{4}$ "
From Carillon canal to Chute à Blondeau	$4\frac{3}{4}$ "
Chute à Blondeau canal	$\frac{1}{8}$ "
From Chute à Blondeau to Grenville canal	$1\frac{3}{8}$ "
Grenville canal	$5\frac{3}{4}$ "
From the Grenville canal to entrance of Rideau navigation	56 "
Rideau Navigation ending at Kingston	$126\frac{1}{4}$ "
Total distance from Montreal to Kingston	$245\frac{5}{8}$ "

These canals were constructed primarily with a view to the defence of the Province. They were long held by the Imperia Government and were transferred to the Canadian authorities in 1856. The necessity of the Rideau canal for defensive purposes was suggested during the war of 1812 when the difficulty of communication by the way of the St. Lawrence River, in the face of an enemy, was often great. The cost of construction has been $4,132,166. The highest point is the Rideau lake, which is 292 feet above the level of the Ottawa at the outlet of the canal.

4. The Trent river navigation is a term applied to a series of water stretches, efficient at present only for local purposes. The series is composed of a chain of lakes and river extending from the Bay of Quinté, Lake Ontario, to Lake Huron via Lake Simcoe. The execution of this scheme, commenced in 1837, was subsequently deferred. Recently Parliament has voted appropriations for further development.

5. The river Richelieu and Champlain system, commences at Sorel at the confluence of the rivers St. Lawrence and Richelieu, 46 miles below Montreal, and extends along the latter river to the basin of Chambly; thence by the Chambly canal to St. John's; thence to Lake Champlain, at the southern end of which connection is made by the Champlain canal with the Hudson river, by which the city of New York is reached. The Chambly canal is 12 miles long.

It will thus be seen that by the canal system of Canada, as originally sketched, it was proposed—1st, to form an interior route of transport from Montreal to Lake Ontario, adapted for the conveyance of troops and munitions of war; 2nd to overcome the obstacles of the St. Lawrence and to give close communication between the vast grain-growing regions of the great lakes and Montreal; 3rd, to bring Montreal and New York into communication with each other by means of water transport. The total cost up to the 30th of June, 1885, of the whole canal system of Canada was $28,544,000. The total actual length of canal is 73 miles.

Navigation Returns.

The sea-going vessels entered and cleared at Canadian ports in 1885 numbered 21,192, of an aggregate burden of 7,644,615 tons and carried 294,470 men. In the inland waters lying between

Canada and the United States, there entered and cleared 29,959 vessels of 6,440,097 tons, carrying 268,586 men; in the coasting there entered and cleared, 82,148 vessels of 15,944,422 tons burden, carrying 779,360 men. Of these vessels, 56,645, with a tonnage of 21,685,856 tons, were steamers. Thus, 42 per cent of the total number of vessels and 72 per cent of the total tonnage were steamers.

Of the sea-going craft which in 1885, entered inwards 1706, with a tonnage of 1,544,306 tons, were British; 5190, with a tonnage of 759,105 tons, were Canadian, and 3743, with a tonnage of 1,497,253 were foreign. Of these, 959 British vessels with a tonnage of 1,248,367 tons, carried cargoes: the Canadian vessels, carrying cargoes numbering 3164,with a tonnage of 439,307, and the foreign, 1,913 with a tonnage of 815,536.

These vessels brought cargoes to Canadian ports from over forty countries, chiefly however from the United States, British West Indies, Newfoundland and Brazil; vessels arrived from France, Spain, Portugal, Belgium, Holland, Germany, China, Denmark, Egypt, Japan, Italy and other countries.

The sea-borne products of Canada were distributed by 1493 British vessels with a tonnage of 1,440,551 tons; by 5095 Canadian vessels with tonnage of 801,445, and by 2534 foreign vessels with a tonnage of 1,226,858. Besides these, there cleared outward, *in ballast*, 20 British vessels of 16,457 tons burden; 227 Canadian of 28,344 tons, and 1,184 foreign of 324,296 tons. These products were widely distributed, business having been done with about forty countries, chiefly, the United Kingdom, United States, Newfoundland, France and French possessions, the West Indies, Spain, Portugal, Belgium, Holland, Germany, Italy and other European countries, Australia, different South American and Central American countries, China, Japan, etc.

Out of a total of 2,226,471 tons weight of cargo and 2,223,714 tons measurement of freight brought to and carried from Canada by sea-going vessels, British vessels carried 1,105,157 tons weight and 509,343 tons measurement; Canadian vessels, 591,526 tons weight and 860,450 tons measurement; and foreign vessels, 530,-788 tons weight and 853,901 tons measurement.

Thus about 70 per cent of the whole sea-borne traffic of Canada is done under the British flag.

Besides this traffic directly done between Canadian ports and the rest of the world, there is a considerable business done with other countries through the United States; Canada, availing herself of the opportunities afforded by the ports of New York and Boston, and shipping exports, or receivings imports through these channels. In 1885, the value of goods exported to other countries in bond through the United States was $4,849,885.

The imports are not given in the Canadian returns, but from the American, it appears that there are about $25,000,000 worth of goods imported into Canada in bond through the United States. The proportion of this trade carried by vessels bearing the British flag is about the same as in the case of the direct carrying trade.

XIII.

AUXILIARIES TO THE TRANSPORT SYSTEM.

The auxiliaries to a properly developed transport service in a country like Canada are telegraph and telephone lines; postal and money order accommodations. In addition to these there is need of a well lighted coast to protect the merchant marine frequenting its waters.

Telegraph System.

Canada is well supplied with the telegraph system, partly by incorporated companies and partly by the Government of the Dominion.

The Government lines are:—1st. Those of the Gulf of St. Lawrence and Bay of Fundy; 2nd. Those of the North-West Territories, and 3rd. Those in British Columbia.

The first named connect the Magdalen Islands, the Island of Anticosti and other fishing regions with the Mainland, and give fishermen early information of the condition of the fisheries in the various localities. A line of telegraph has also been extended along the north shore of the St. Lawrence, to supply speedy communication in case of shipwrecks. The chief quarantine station in the St. Lawrence is also connected with the mainland by cable, thus enabling the authorities at Ottawa to have instant knowledge of the arrival of vessels with disease on board.

In the North-West Territories, the Government has constructed a system of telegraph lines, embracing Prince Albert, Battleford, and Edmonton on the north; and Dunmore, Fort McLeod and Turtle mountains at the south, thus forming a complete circuit, including within its ample reach, the Indian tribes on the reserves and bringing the several corps of Mounted Police into close communication with headquarters at Ottawa and with each other.

In British Columbia a deep sea cable has been laid between Vancouver Island and the United States territory, by which connection is made with the whole United States system.

The railway companies have telegraph lines for the efficient working of trains.

The Canadian Pacific telegraph line will shortly extend from ocean to ocean, with subsidiary lines running through Ontario.

The telegraph companies have their lines over the Dominion, connecting every city and village.

The statistics of telegraphs are, in round numbers, as follow:

		1885.	1868.
Stations		2,409	.....
Miles of poles		20,347	7,000
Miles of wire		47,306	8,507
Messages Gov't. lines	105,000		
" company lines	5,138,500	5,243,500	690,000

The position of Canada on this continent makes it the landing ground for the majority of the cable lines which connect North America with Europe, thus ensuring it direct cable communication with Great Britain.

The Imperial Government, it is understood, have under consideration to connect, by cable, Bermuda and the West Indies with Halifax, the chief Imperial naval station on this continent.

A company has been chartered by the Canadian Parliament for the purpose of laying a cable between the Pacific coast of Canada and Hong Kong and other points on the Chinese and Japanese coasts.

The use of the telephone has become very general in Canada. It has been introduced into about 200 cities and towns, 175 of which are connected as by telegraph. There are about ten thousand sets of instruments in use at the different exchanges and agencies in Canada.

Post Office System.

The post office facilities in Canada are fully equal to those of any country. Notwithstanding the great distances to be traversed, letters are carried from the Atlantic to the Pacific for three cents (1½d) per half ounce prepaid. Newspapers sent from the offices of publication are carried free. There is a parcel, sample and book post. The money order system is cheap and complete, not only between different parts of Canada, but between Canada and the United States, and Great Britain and other European countries.

The statistics of the Post office Department show marked development since Confederation. The following comparative statement will indicate the growth of the postal facilities during the past ten years :—

——	1885.	1875.	Per cent. increase.
No. of Post offices in operation	7,084	4,892	45
Whole length public mail route, miles	50,461	38,430	31
Length of railway route, miles	9,858	4,491	120
Aggregate annual mail travel, miles	22,173,455	14,384,678	54
Increase of mail travel 1885 over 1884	1,287,139	.....	.....
Aggregate cost of mail service	$3,097,882	$1,873,241	65
Aggregate post stamps, envelopes and cards sold	$2,325,490	$1,178,751	97
Number registered letters carried	3,060,000	1,750,000	75
Number of parcels of samples, patterns carried	10,500,000	.....	.....
Number of money orders issued (domestic)	352,904	.....	.....
Amount of money orders issued (domestic)	$8,254,003	$6,135,996	34
Average amount each money order	$ 23.40	.....	.....
Number money orders issued, foreign	146,339	.....	.....
Amount money orders issued, foreign	$2,310,208	585,443	263
Average amount each money order	$ 14.60	.....	.....
Number of money order offices	885	687	28
Fees received from issuing money orders	73,593	$ 54,360	35
Whole number of letters, post cards, &c., carried	82,200,000	42,000,000	96
Whole number of parcels by parcel post	600,000	131,352	356
Aggregate revenue for the year	$2,400,000	1,536,509	56
Dead letters, circulars and post cards	694,556	572,128	21
Registered dead letters	16,340	3,276	.....

The Light House System of Canada.

The light house system of Canada is free for all nations without payment of dues of any kind. It is extensive, rapidly expanding, and maintained in a high state of efficiency.

In 1867 there were 198 light stations and two fog whistles in the Dominion, as then constituted. At the close of 1885 there were 526 light stations, 23 fog whistles, and 12 automatic fog horns. The whole number of persons engaged in the outside service was 1,414, and the total amount expended during the last fiscal year was $1,038,893; the total cost of maintenance of lights and of four steamers in attendance was $541,297.

In a paper read before the British Association in 1885 by the Deputy Minister of Marine, William Smith, Esq., it is stated that the extent of the sea coast in the Dominion to be lighted up and provided with fog whistles, bell buoys, automatic buoys, ordinary buoys and beacons is 3,200 miles; inland coast, 2,600 miles, making in all about 5,800 miles of coast to be lighted and buoyed. To effect this object there are 308 sea coast light stations, 224 inland light stations with fixed lights, and 17 light ships. The number of light stations with fixed lights is 467; with revolving lights, 82.

There are 483 lights in the Dominion, the apparatus of which is on the catoptric principle; and 66 dioptric lights, two of which are of the first order, twelve of the second and six of the third.

Of course many thousand miles of Canada's coast line, included in the Hudson's Bay line and along the indented littoral of British Columbia, have not been lighted, the requirements of navigators not yet embracing these regions.

In addition to lighting the coast of Canada, the Canadian Government maintain lights on the Island of Newfoundland, some lighting the Straits of Belle Isle, and others the entrance of the Gulf between Cape Breton and Newfoundland. The light on Cape Race is also maintained by Canada. Two powerful lights and a steam fog whistle have been established by Canada on an island belonging to the United States on the coast of Maine; and in Lake Superior, Canada has a fine light and steam fog whistle on another island owned by the United States.

Canada has a large humane establishment on Sable Island in

the Atlantic Ocean, with lights, life-saving stations, life-boats, surf-boats, rocket apparatus, and a staff of twenty skilled men in daily practice. Telephone communication will soon be established between the five stations on the island, and it is proposed to have cable communication with the mainland, 65 miles distant.

XIV.

THE SAVINGS' BANKS OF CANADA.

These include the Post Office Savings' Banks, those called Government Savings' Banks, and several specially chartered institutions. In addition, the chartered banks have savings' branches. The following table will indicate the progress the country has made in accumulating wealth:—

Banks.	Savings.		
	1868.	1878.	1885.
Government institutions.....	$ 2,167,025	$ 8,498,146	$ 34,836,783
Chartered Savings' Banks.....	2,461,080	5,835,433	9,064,959
Savings' branches of cht'd banks.	18,703,664	31,552,038	49,845,515
Friendly and Loan Society.....	959,051	8,269,295	13,876,576
Total.....	$24,290,820	$54,154,912	$107,623,833

From returns to Parliament, it appears that on the 30th of June, 1884, there were 27,856 male and 15,253 female depositors in the Government, and 40,475 male and 26,207 female depositors in the Post Office, savings' banks. In all, there were 111,790 deposits in the two branches under the control of the Government of Canada. There are no later returns, but the increase in the amount of deposits, during the eighteen months which have intervened, indicates that the number of depositors at present is not short of 120,000.

As to the classes of depositors, a return of the same date as those above-mentioned shows the following results in the case of the Post Office savings' banks:—

Classes of Depositors.

Occupation.	No. of Depositors.	To Credit of Each Class.	Average of Each Class.
Farmers	14,000	$4,722,000	$337
Mechanics	7,850	1,422,000	181
Trust accounts and young children	5,500	170,000	31
Labourers and sailors	4,270	724,000	169
Clerks	3,000	522,000	174
Tradesmen	1,600	468,000	298
Farm and other male servants	1,470	277,000	188
Professional	1,572	392,000	249
Miscellaneous	1,680	215,000	128
Married women	12,000	2,350,000	196
Single	10,500	1,275,000	120
Widows	3,240	708,000	214

By Provinces, the statement is as follows:—

Post Office Savings' Banks.

	Ontario.		Quebec.	
	Males.	Females.	Males.	Females.
Having sums not exceeding $100	17,415	12,614	2,873	1,510
" " between $100 and $350	8,838	6,171	1,636	890
" " " $300 and $500	3,590	2,110	725	1,060
" " " $500 and $1,000	3,005	1,549	654	944
" " exceeding $1,000	1,321	539	418	610
Total	34,169	22,983	6,306	3,224

Depositors holding $1,000 and upwards aggregated	$ 2,789,227
" " $500 to $1,000	3,819,062
" " less than $500	6,571,700
Making a total of Post Office savings deposits	$13,179,989

The return for March, 1886, shows that the total amount on deposit in the Post Office branch on the 31st of that month was $16,954,243.

In the other Provinces, the savings' banks under the control of the Government are called "Government Savings' Banks"—there being no Post Office branches in these Provinces.

The returns up to the 30th of June, 1884, are as follow :—

	$100 and under.		$100 to $300.		$300 to $500		$500 to $1,000.		Over $1,000.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Nova Scotia.....	4,788	3,562	2,875	1,741	1,166	606	1,163	475	1,292	447
New Brunswick	3,135	2,510	1,911	1,516	810	527	827	449	750	308
Prince Edward Island..	976	707	675	392	285	107	284	95	296	72
British Columbia	1,417	396	628	148	340	63	429	67	650	102
Manitoba	789	231	551	135	233	37	191	27	115	26
Ontario (Toronto).....	583	240	269	112	127	53	141	43	160	58

The totals are as follows:—

Nova Scotia	11,284 males with deposits—	$ 4,635,881
" "	6,831 females, " "	1,857,391
New Brunswick.....	7,433 males, " "	2,877,947
" "	5,310 females, " "	1,428,755
Prince Edward Island.	2,516 males, " "	1,078,336
" " "	1,373 females, " "	334,359
British Columbia	3,464 males, " "	2,033,950
" "	776 females, " "	313,515
Manitoba.....	1,879 males, " "	537,447
"	456 females, " "	116,065
Ontario (Toronto).....	1,280 males, " "	560,161
" "	506 females, " "	198,170
Totals.....	43,108	$15,971,984

The latest returns of these banks published by the Government is for the month of March, 1886. The deposits then were $19,154,508 making for the two branches under Government control a total of $36,108,841.

The Province of Quebec does not appear to advantage in the foregoing tables. The people of that Province, however, are thrifty and saving. They have several savings banks not directly under Government control, and seem to prefer these to the Post Office or Finance Departments.

The two chartered savings' banks of Quebec Province show, as already stated, deposits of over $9,000,000. In this Province, attention has been directed to educational savings' banks, designed to teach school children thrift.

Taking the total of all the savings of the people of Canada, deposited in the various savings' banks, the result is an average of the population per head of $21.60 (£4 8s 0d).

XV.

THE CITIES OF CANADA.

The cities and towns of Canada, having over 5,000 inhabitants, and their increase during three decennial period given below, show the development which urban life has attained in this country.

	1861	1871	1881
Montreal	90,323	107,225	140,747
Toronto	44,821	56,092	86,415
Quebec	59,990	59,699	62,446
Halifax	25,026	29,582	36,100
Hamilton	19,096	26,716	35,961
Ottawa	14,669	21,545	27,412
St. John	27,317	28,805	26,127
London	11,555	15,826	19,746
Portland	.....	12,520	15,226
Kingston	13,743	12,407	14,091
Charlottetown	.....	8,807	11,485
Guelph	5,076	6,878	9,890
St. Catherines	6,284	7,864	9,631
Brantford	6,251	8,107	9,616
Belleville	6,277	7,305	9,516
Trois-Rivières	6,058	7,570	8,670
St. Thomas	.....	2,197	8,367
Stratford	.....	4,313	8,239
Winnipeg	.....	241	7,985
Chatham	4,466	5,873	7,873
Brockville	4,112	5,102	7,609
Levis	5,333	6,691	7,597
Sherbrooke	.....	4,432	7,227
Hull	.....	.....	6,890
Peterborough	.....	4,611	6,812
Windsor	.....	4,253	6,561
St. Henri	.....	.....	6,415
Fredericton	5,652	6,006	6,218
Victoria	.....	3,270	5,925
Sorel	4,778	5,636	5,791
Port Hope	4,162	5,114	5,585
Woodstock	.....	3,982	5,373
St. Hyacinthe	.....	3,746	5,321
Galt	.....	3,827	5,187
Lindsay	.....	4,049	5,080
Moncton	.....	.....	5,032
Yarmouth	.....	.....	6,280
Sydney	.....	.....	5,484
Chatham N. B	.....	.....	5,762

Montreal is the chief city of Canada. It is built upon a series of terraces, marking the former levels of the river, and is nearly four miles long by two broad. Mount Royal, which rises 700 feet above the river level, forms a magnificent background to the busy city. The estimated value of real estate within Montreal is $90,000,000. It has increased in population since 1881, both by annexation of adjacent municipalities and by natural increase, and contains now a population of about 180,000. Its hotels and public buildings are fine, and Dr. W. H. Russell years ago pronounced its quays "imperial in their proportions."

Fourteen lines of steamships trade regularly to the port.

The statistics of the business of the port are as follow:—

YEARS.	SEA-GOING VESSELS ARRIVED.	TOTAL TONNAGE.	MERCHANDISE EXPORTED.	MERCHANDISE IMPORTED.
1850.....	211	46,156	$ 1,744,772	$ 7,174,780
1880.....	710	628,271	30,224,904	37,103,869
1881.....	569	531,929	26,561,188	43,546,821
1882.....	648	554,692	26,334,312	49,749,461
1883.....	660	664,263	27,277,159	43,718,549
1884.....	626	649,374	27,145,427	42,366,793
1885.....	629	683,854	25,274,898	37,403,250

Montreal is the centre of the great railway systems of Canada. The Grand Trunk and Canadian Pacific railways have their headquarters in this city. The Central Vermont and South-Eastern railways connect these two systems with the railways of the Eastern and Central United States. Besides these, there are several minor roads centering in Montreal. It is the most important manufacturing city in the Dominion, having large and varied industries, which give employment to many thousands of artizans.

Toronto

is the largest city on the Canadian side of the great lakes. It is the seat of the law courts, and the centre of education for the great Province of Ontario. Entered by six railways, converging from different points of the compass, possessing a fine harbour, situated in the centre of a rich agricultural district, and being at once the religious, educational, political, literary, legal, and

commercial centre of the most populous province of the Federation, it has advanced with great rapidity. Its population in 1885 was 120,000. Its growth is manifest by the returns. The value of assessed property in 1878 was $49,053,765, and for 1886 it is $72,721,559, an increase of 48 per cent. in eight years.

The value of new building erected since 1880 is as follows: 1881, $1,302,200; 1882, $1,757,630; 1883, $1,406,740; 1884, $2,033,245; 1885, $3,449,375.

Quebec.

The city of Quebec is passing through a period in its history, such as all the old garrison towns of Canada have passed through since the withdrawal of British troops. In addition it has had to experience the sharp rivalry of Montreal, made the keener in consequence of the improvement of the channel between the two cities. The effects were seen in the diminished population in 1871, compared with 1861. The construction of railways, the development of manufactures and interprovincial trade during the last twelve or fifteen years, have given the Ancient Capital a fresh start. The extent to which it has suffered through the successful absorption of its trade by Montreal, may be judged from the fact that while, in 1876, the tonnage entered outwards for sea was 711,386 tons, in 1885 it was but 562,064; Montreal in the same years increasing from 310,608 tons to 494,864; an increase of nearly 60 per cent. The Canadian Pacific Railway has recently extended its facilities to Quebec, thus connecting it directly with the great North-West by rail.

Other Cities.

The chief cities in the Maritime Provinces are Halifax and St. John. Both are fine ocean ports. The harbour of Halifax is pronounced the finest among the great harbours of the Empire. It is easy of access for ships of every class, and capacious enough to afford anchorage for the navies of all Europe. It runs inland over fifteen miles, and, after passing the city, suddenly expands into Bedford Basin, a beautiful sheet of water, covering an area of nine square miles, completely land-locked. Halifax is the chief naval station of British North America, and the only city now occupied by Imperial troops. The city and harbour are protected

by eleven different fortifications, armed with powerful batteries of three and six hundred pound Armstrong rifled guns. A large store of munitions of war of all kinds, including torpedoes, is kept there by the Imperial Government. It has of late years made rapid strides in manufacturing. St. John, the commercial capital of the Province of New Brunswick, is admirably situated at the mouth of the River St. John, has a harbour open all the year round, regular steam communication with all parts, and railways running east, west, and north. It has extensive maritime and manufacturing interests, and is the centre of the lumber trade of the country watered by the St. John river. It suffered severely in 1877 from a fire, which reduced the business portion to ashes, but with characteristic energy the people set to work to rebuild their city, and it now forms an active, progressive community. The population of Halifax is now 40,000, and of St. John 28,000.

Hamilton is the fourth most populous city in Canada. It is one of the most rapidly growing and enterprising cities in the Dominion, beautifully situated on the south-western curve of Burlington Bay, at the western extremity of Lake Ontario, and has superior facilities for becoming a large manufacturing city, being accessible from all points by railway and lake navigation, and being situated in the centre of the finest grain-producing region of Ontario.

London, the westernmost city in Ontario, is splendidly situated on the River Thames, in the County of Middlesex. Fifty years ago its present site was a wilderness; now it is a fine city, regularly laid out, having wide streets well built upon with handsome buildings. It has good railway communication with all parts of Canada. The aim of its founders was to reproduce in Canada the names associated with *the* London. Accordingly, it has its Pall Mall, Oxford, Waterloo, and Clarence streets; Westminster and Blackfriars bridges. London (Canada) is surrounded by a rich agricultural country, furnishing it with a large trade in wheat and other produce. Within its borders, are numerous manufactories, mills, machine shops, foundries, breweries, banks, asylums, colleges, etc.

Ottawa, the seat of the Federal Government, is the *entrepot* of the great lumber trade of the Ottawa River and its tributaries, and on the piling grounds around the Chaudiere falls

there is always a stock of lumber estimated at 125,000,000 feet. To keep these filled to their fullest capacity a number of mills cluster around the falls, employing, some of them, over a thousand men; supplied with the finest machinery; lighted with powerful electric lights, by the aid of which, work, during the season, is maintained without ceasing both day and night. The city itself is also lighted by electricity. Its population is 32,000.

The buildings belonging to the Federal Government are the chief attraction of Ottawa; the main one, situated on a high bluff which juts out into the Ottawa river, is the Parliamentary. It contains the Senate Chamber and House of Commons. The dimensions of these halls are the same as those of the House of Lords, viz.: 80 by 45 feet; they are lighted by the electric light. The whole building, which is 500 feet in length, is constructed of a light-coloured sandstone, the walls and arches being relieved with cut stone dressings of sandstone, and with red sandstone. The library, a circular building, constructed after the plan of the library of the British Museum, has a dome 90 feet high, and is in the rear of the central tower, which is 250 feet high.

Separated from the main building, and distant from either end about a hundred yards, are the two departmental buildings, each with a front of 375 feet in length. The buildings together cover about four acres, and cost about $5,000,000. The growth of departmental business, occasioned by the development of the North-West, has rendered necessary the construction of a third departmental building, which is now in course of erection.

Ottawa is well connected with the rest of the Dominion by railways, which run in every direction, north, south, east, and west. As illustrative of the extent of country governed from Ottawa, the distances of some of the cities and towns of Canada from the capital may be given: Battleford (North-West Territories), 2,328 miles; Calgary (North-West Territories), 2,141; Winnipeg (Manitoba), 1,302; Victoria (British Columbia), 2,871; Toronto, 261; London, 377. These are Western cities. Turning eastward, Halifax is 978 miles distant from Ottawa; St. John, 835; Charlottetown (Prince Edward Island), 1,060; Montreal, 120; and Quebec, 279 miles. By the aid of railways and telegraph lines, cities as far apart as Charlottetown and Victoria are within hailing distance of the Capital.

Victoria, the capital of British Columbia, is a thriving city with a winter population of about 8,000, or nearly double its population of 1877. The seal-fur, salmon canning, fish, and lumber trades have been greatly developed during recent years, and the harbours of Victoria and Esquimault are thronged with shipping, to an extent unknown a few years ago—an earnest of the business that will be done there in the near future. The scenery is marvellously fine; the climate salubrious, and sport abundant. It boasts of being the most English town in Canada. It has direct steam communication with San Francisco. A submarine cable across the Gulf of Georgia connects it with the main land, and thence with the other Canadian cities. The telephone system and electric light have been introduced, as is the case in most of the cities of Canada.

The following is the official statement of assessed values, including exemptions: 1880, $2,681,250; 1881, $2,690,000; 1882, $2,809,675; 1883, $2,887,755; 1884, $3,092,200; 1885, $5,178,800. The value of new building erected in 1885 is given at $775,000. The revenue of the corporation has increased from $57,000 in 1876 to $120,000 in 1885.

The city of Winnipeg is of recent growth. Its population in 1871 was 241; in 1881, 7,985, and in 1885, 19,574. The total assessed value in 1885 was $22,859,592; the value of new buildings erected in 1885 was $190,000. It has 912 trading institutions of every class. The business of the year 1884 was as follows: Wholesale mercantile, $14,220,098: retail mercantile, $5,809,600; manufacturing, $2,550,000.

The city is lighted by electricity and gas. It has good banking facilities, hotel accommodations, street cars, and complete water and drainage systems. The main street, 100 feet wide, is paved with cedar blocks, over two miles in length, and is one of the handsomest streets in Canada. The city, like nearly all Canadian cities, is provided with the electric fire alarm system, and the equipment of the fire brigade is complete.

XVI.

INSURANCE.

The statistics of Insurance show great progress in the employment of this safeguard.

In 1869 the amount at risk in the Fire Insurance offices was $188,359,809 (£38,704,075.)

On 1st January 1886, it was $623,779,669, which is $18,271,880, more than at the same date in 1885.

The amount of policies taken in 1869 was $171,540,475 and in 1885, $500,453,437.

During the period 1869-1885, both years included, the total net cash premiums received by the Insurance companies amounted to $58,963,555, and the total losses paid by the companies to $44,522,953. Included in this latter amount is the abnormally large amount paid during the year 1877 when the St. John fire caused a demand upon the companies for $8,490,919, as against $2,867,295 in 1876, and $1,822,674 in 1878.

The superintendent of Insurance referring to the increase in the amount at risk in 1884 compared with 1869—equal to $417,000,000—said, "although this immense increase may partly be due to a larger use of insurance among the people and partly to a transfer of risks from local companies to the licensed ones, there can be no doubt that much the greater part of it is due to the growth of business and property in the Dominion."

With regard to Life Insurances, the statistics show that in 1869, the premiums for the year were $1,238,359, the amount of insurance effected was $12,854,132 and the net amount in force was $35,630,082.

In 1885, the premiums were $4,618,978, the amount effected was $35,730,211, and the net amount in force was $135,447,726.

This by no means represents the whole of the life insurance effected in Canada, as there are many fraternal, benevolent, industrial and religious associations doing business in life insurance either on the "old liner's" plan or on the co-operative or assessment system.

The companies reporting to the Government do not include the whole business done in any one branch. The following state-

ment will show the total amount at risk and the total premiums paid, so far as reported to the Government at the end of 1884.

	AMOUNT AT RISK.	PREMIUMS PAID.
Fire Insurance.....	$605,507,789	4,980,128
Marine "	14,797,028	379,000
Life "	135,447,726	4,194,886
Accident "	22,810,733	137,660
Guarantee "	12,131,754	64,042
Total	$790,695,040	9,755,716

The increase in the amount of insurances effected is very marked during the period 1881-1884. For the eleven years 1870-80 the increase in fire insurances was $223,203,462. During the fours years 1881-4 it was $193,944,518. The first period shows an increase of $20,300,000 *per annum ;* the second, $48,486,-000 per annum.

The same fact of great increase is presented in the life insurance statistics. During the twelve years 1869-80, the annual average amount effected was $17,230,000. During the four years 1881-84 it was $20,875,000, the increase being in the face of the rapid spread of fraternal and other associations, not reporting to the Government.

The fire losses in Canada show a decrease favourable to the companies. In 1884 they were at the average rate of $5.37 per $1,000 of current risks. In 1881, 1882 and 1883 they were $7.35, $5.68, and $5.56 respectively.

The statistics of 1885 show that in the case of each of the 29 companies doing fire or fire and inland marine insurance, the premiums received were in excess of the losses paid.

XVII.

NEWSPAPERS.

Canada at the end of 1885 had 646 newpapers and periodicals published within her borders. Of these 71 were daily, 10 tri-weekly, 21 semi-weekly, 453 weekly, 13 semi-monthly and 73

monthly; 34 were devoted to religion, 19 connected with educational institutions, 3 devoted to education, 10 to agriculture, 1 each to fruit and vine culture, floriculture, dairying, phonography, children, finance, railway, army, textiles, milling, stamp collecting, inventions, lumber, pharmacy, live stock; 4 were devoted to law, 7 to temperance, 8 to commerce, 2 each to poultry, insurance, science, sporting, hygiene. The various Friendly societies had journals in their interest as follows:—Foresters 3, Free Masons 2, workmen and Oddfellows 1. The Indian aborigines have one paper devoted to their interests.

According to languages, there were seven journals published in German, 51 (of which 15 were daily) in French, the remainder being in English.

According to provinces, the number of newspapers and periodicals was:—Ontario, 396; Quebec, 113; Nova Scotia, 46; New Brunswick, 38; Manitoba, 26; Prince Edward Island, 11; British Columbia, 8, and the North-West Territories, 6.

The extent to which the newspapers use the telegraph is seen in the fact that the number of words of press reports transmitted in 1885 was 65,250,000. The number of words of parliamentary reports sent by telegram during the session of 1885, was 4,600,000.

According to the census returns, there were, in 1881, 394 printing offices, employing 5,311 hands, and having an invested capital of $4,291,136.

In 1871 there were 308 printing offices, employing 3,497 hands and having an invested capital of $2,158,660.

Since 1881, the value of the printing presses imported for use in the Dominion has been $530,000, and since 1867, the total value of the printing presses imported for use within Canada is $1,231,360.

The first newspaper published in Canada was issued 21st June 1764. The first newspaper in Upper Canada, appeared in 18th April 1793.

XVIII.

Judged by the proportion of accumulated wealth to her population, or by the average earnings per inhabitant, Canada stands on an equal footing with the United States, being, in respect to earnings, only excelled by one or two countries.

The expenditure for houses in the cities shows that the average is about $20 per head of the urban population, which gives the Canadian cities a high position among the growing cities of the world. The money expended in the city of Toronto in 1885 was 84s per inhabitant. The assessed value of Montreal increased $9,000,000 during the past four years, and last year, the addition to buildings was over $3,000,000, while Winnipeg, with a population of nearly 20,000, added $1,700,000 to its buildings in 1883.

In the rural districts, the money expended on buildings in the Province of Ontario amounted to about $10,000,000 a year, or 36s per head of the rural population. The same proportion is, it is believed, maintained in the case of Manitoba. The other provinces, from the best information obtainable, have also added largely to the capital invested in buildings.

After paying for food, rent, clothing and taxes, the Canadian has 75 days in the year for pleasure, which is the same as in the United States.

The ratio of the public debt to wealth is somewhat over 6 per cent., and the ratio of taxation to earnings is about 6 per cent. This is considerably less than any European country, and close to that of the United States. Most of Canada's public debt is caused by expenditure on account of railways, canals and other works, and a considerable proportion of the interest on the debt is met by interest-bearing assets.

The unsold Crown lands of Canada administered by the Federal Government alone, at 3s an acre, would suffice to redeem the whole debt. The addition of the Crown lands under the control of the several Provincial governments would bring down the value required for that purpose to 2s 6d per acre.

The wealth of Canada is estimated at £650,000,000, and the income £118,000,000. This is equal to £148 wealth per inhabitant and £27 income. The percentage of income on capital is 18.1. In the United States it is 14.9, Europe 13.8, England 14.3, and Australia 22.6.

The accumulations of savings in Canada have averaged over $6,000,000 a year since 1878.

The assessed value of real and personal property in the Province of Ontario, during ten years, increased as follows :—

	Real Property.	Personal Property.
	$	$
1874, rural	206,892,278	20,463,878
" urban	118,591,838	26,546,804
Totals	$325,484,116	$47,010,772
1883, rural	400,446,524	26,351,197
" urban	182,784,609	30,120,454
Totals	$583,231,133	$56,471,661

The numbers of ratepayers in the same province increased from 379,572 to 463,184, and the average assessed value per acre of real property increased from $10.55 to 19.19.

An examination into the value of farm property in the Province of Ontario made during the years 1882 and 1883, resulted as follows:—

	1882.	1883.	Increase.
	$	$	$
Farm land	632,342,500	654,793,025	22,450,525
Buildings	132,711,575	163,030,675	30,319,100
Implements	37,029,815	43,522,530	6,492,715
Live stock	80,540,720	99,882,365	19,341,645

XIX.

MANUFACTURES.

The general condition of the manufacturing industries of Canada in 1881, and the advance made during the decennial period, may be gathered from the following table:

	1871.	1881.
Capital invested	$ 77,694,020	$165,302,623
Hands employed	187,942	254,935
Amount of yearly wages	40,851,069	59,429,002
Value of raw material	124,907,846	179,918,591
Total value articles produced	221,617,773	309,676,068

Since 1878 the development has been more marked than during any previous period in the industrial history of Canada. New manufactures have been started, and old ones enlarged. A partial investigation made in 1884-5, in the Provinces of Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island, affords the data from which to calculate that there had been in 1884 an increase over 1878 of 75 per cent. in the number of hands employed; of 75 per cent. in the amount of wages paid; of 93 per cent. in value of products; and of 75 per cent. in capital invested. The annual increase during the past six years in value of products is 15 per cent. against 4 per cent. during the decennial 1871-80.

The manufactures of Canada are yet in their infancy. The men who cut the first trees and guided the first ploughs—the pioneers of settlement—are a minished race among the present generation. But still they are with us in appreciable numbers. It cannot, therefore, be supposed that much time, thought or capital has been applied to manufacture. The industries of thirty years ago were confined chiefly to home-spun. The first woollen mill of which there is record was started in Quebec in 1826, which, with its old-fashioned machinery, sufficed to do the work required of it till 1837, when new machinery was introduced. In 1857 another woollen mill was started.

In 1858, a mill was started in Galt, Upper Canada, for the manufacture of tweeds, and in 1866, the proprietor, moving to Sherbrooke, in Lower Canada, built the largest woollen mill in Canada. Up to 1880, Canada exported large quantities of her wools and imported manufactured woollens. The returns of 1885 show that the export of Canadian wool was only 989,925 pounds, a decrease of 2,600,000 pounds as compared with the export of 1880. Canada in the latter year imported 6,950,000 pounds of foreign wool, to which she added 7,681,500 pounds of home grown.

The returns of 1885 show that the consumption of Canadian wools has largely increased, while the importation of woollen manufactures, principally from Great Britain, has very considerably increased, owing to the demand for the best qualities.

An analysis of the woollen imports of 1885 shows that, compared with 1880, there was a decrease in the importation of blankets, dress goods, and two-ply and three-ply ingrain, of which the warp is composed wholly of cotton or other material

than wool. There were increases in cashmeres, cloths, coatings, doeskins, tweeds, flannels, hosiery, shawls, yarns, ready-made clothing, carpets—brussels and tapestry—and "all other." The total import of woollen material was $9,053,226 in 1885, against $6,358,867 in 1880. Of the import of 1885, $8,504,756 was from Great Britain. The direction in which the woollen industry of Canada is being developed is in the working up of Canadian wools and the manufacture of articles from imported yarns. In doing this, the industry has assumed proportions in keeping with the growth of population and the increasing demand for woollen goods. The value of the output in 1885 may be put down at nearly eleven millions; an increase of 30 per cent. on the figures of 1881. The increase during the decennial period 1871–81 was at the rate of 4·3 per cent. a-year.

The cotton manufacture of Canada is younger than the woollen. The first mill was established about fifteen years ago. The industry has grown rapidly, and now there are twenty-four mills in the Dominion with a capacity of 600,000 spindles. The growth of the industry is seen in the increased imports of raw cotton for home consumption, which in 1869 were 1,245,208 pounds, and last year were 23,727,525 pounds. As a result of this development, the number of hands employed in 1885 showed an increase of 80 per cent. over those of 1880. The factories are supplied with the latest improvements in machinery, many of them are provided with electric light, and all are roomy and comfortable for the operatives. The people of Canada need annually about forty yards of cotton each. The imported cotton is about 42,000,000 yards, leaving 158,000,000 yards to be supplied by the Canadian factories.

The canal system of Canada has contributed materially to the development of manufactures. Manufactures of silk, wood, flour, paper, woollens, cottons, iron and steel, and others, have sprung up along the canals, utilizing the water power. There are now in the above lines 115 mills employing nearly 8,000 hands. The construction of railways has also done much to aid in the rapidity with which manufactures have increased.

Other Manufactures.

In all there were, according to the census of 1881, nearly three thousand industrial establishments in Canada. Some of the chief were :—

	Invested Capital.	Yearly Product.
	$	$
Agricultural Implements	3,995,782	4,405,397
Boots and Shoes	6,491,042	17,895,903
Cabinet and Furniture	3,943,419	5,471,742
Locomotive Works	1,630,598	3,956,361
Cheese Factories	1,021,435	5,464,454
Cotton	3,476,500	3,760,000
Distilleries	1,303,010	1,790,800
Engine Building	990,300	1,338,000
Fittings and Foundry Work	9,473,808	11,548,088
Flour Mills	13,857,923	41,772,372
Furriers and Hatters	1,934,862	3,352,961
Hosiery	630,821	1,385,730
Iron Smelting Furnaces	2,172,100	1,197,514
Meat Curing	1,450,000	4,084,133
Musical Instruments	670,000	1,221,000
Oil Refineries	1,812,700	4,050,000
Nail and Tack Factories	1,245,500	1,689,450
Paper Factories	2,237,950	2,446,700
Preserving Food	1,222,558	2,685,861
Rolling Mills	697,500	1,026,900
Saddle and Harness	1,323,845	3,233,973
Sash, Door and Blind Factories	1,996,858	4,872,362
Saw Mills	25,487,233	38,541,752
Shipyards	1,570,916	3,557,258
Sugar Refineries	2,150,000	9,627,000
Tanneries	6,386,222	15,144,535
Tin and Sheet Iron Works	1,993,054	3,738,246
Tobacco Factories	1,829,420	3,060,300
Wool Cloth	5,272,376	8,113,055

XX.

CANADIAN FORESTS.

The forests of Canada formerly extended in an almost unbroken stretch from the Atlantic Ocean to the head of Lake Superior, a distance of about 2,000 miles. The great plains of the North-West have always, within the memory of man, been sparsely timbered, but on the Pacific slopes of the Rocky Mountains down

to the shores of the ocean there are mammoth trees that can favourably compare with the growth of any region on the globe. From the earliest days of its occupation by the French, the forestal wealth of the country washed by the St. Lawrence engaged the attention of the home government, who saw therein vast resources available for their naval yards; they drew from these forests large numbers of masts and spars and issued stringent regulations for the preservation of the standing oak.

When the country was ceded to the British Government but little attention was at first paid to its vast timber supply owing to the fact that almost the whole of the Baltic trade was carried in British bottoms, and that the timber of northern Europe provided an unfailing and convenient return freight for the shipping thus engaged. When, however, the troubles of the Napoleonic era commenced and especially when the Continental Blocus was enforced, the timber supplies of the Baltic became uncertain and insufficient. It was then that the timber importers of Great Britain turned their attention to the North American colonies and found there, not only all the timber they required, but occupation for the vast fleet of unemployed vessels lying idle in their harbours. Thus we find that, while in the year 1800, only some 2,600 loads (fifty cubic feet make a load, and may be considered equivalent to one ton of freight) of timber reached Great Britain, in 1810 there were 125,300 loads and in 1820 about 308,000 loads. When the war duties imposed on wood of European growth were gradually reduced, it was feared that the Canadian product could no longer hold its position in the English markets handicapped as it was by a short season of navigation, and heavy charges for ocean freights and insurance. These fears, however, proved groundless as the following figures will show:—

1850—Exported to the United Kingdom,					1,052,817 loads.
1859—	"	"	"	"	1,248,069 "
1872—	"	"	"	"	1,211,772 "
1881—	"	"	"	"	1,301,301 "

The above figures represent years of normal trade, for the timber trade, like every other, has its periods of depression and inflation. A noticeable feature in these returns is the steady decline in the quantity of square timber exported to England and a corresponding increase in the quantity of sawn or manufactured wood, this is entirely in favour of the Canadian limit-holder for

the square timber involves great waste and the demand for it is fluctuating. During the early part of this century the export timber trade of Canada was confined to the United Kingdom and to the West Indies, but a great change has taken place. The pine lands of the northeastern States of the adjoining republic having become gradually depleted and unable to meet the requirements of the trade in those States, Canadians have successfully competed with the lumbermen of the West (Michigan and Wisconsin) till to-day their exports of wood to the United States almost equal in value those to the United Kingdom; the returns for the fiscal year, ending June 30, 1885, being:—Value of lumber to United Kingdom at shipping ports $9,577,581; do. to the United States $9,355,736. Similar extension on a smaller scale might be noted in other directions, particularly with the West Indies, South America, etc.

Timber was long the staple article of Canada's export trade, but with the settlement and development of the country, it now ranks after agricultural produce, still, it should not be forgotten that the farming interests of the Dominion owe their expansion to the lumber industry. In clearing the land of its primeval forest growth, the soil became amenable to culture, the lumberman was the first and best customer of the farmer; nay, he provided the farmers. The newly arrived immigrant, in the majority of cases, possessed little or no capital, but immediately on his arrival in the country he found regular and lucrative employment in the service of the lumberman, a few seasons' steady work afforded him the means of buying a lot of land; it gave him that knowledge of the woods and handiness to shift for himself, which are so essential to a new-comer placed in surroundings foreign to his past experience; hence he was enabled to select a suitable location and build his own dwelling, or shanty, without extraneous help; when he had raised a small crop of hay, oats and potatoes, he found a ready market at his door; when he was able to purchase a team of horses, he found employment for them during the winter months in hauling logs and he had them for his farm work during the summer—such in brief is the history of many a thriving farmer, or of his father, in Canada. The lumbermen are the pioneers who have opened up Canada. First clearing the land along the banks of the largest rivers, they have followed every tributary stream that could float, or be made to

float a log in the spring freshets, until they have at last penetrated every nook of what, at one time, was a trackless and impenetrable wilderness, hewing and constructing their roads, bridging and damming rivers, establishing depots which speedily developed into villages and towns, and withal contributing largely to the revenue of the country. One other advantage Canada owes to its timber trade, is the enormous increase of its mercantile marine which ranks fourth amongst the maritime nations of the world.

The timber lands of Canada are principally held by and under the control of the Provincial Governments. In the two great lumber-producing Provinces, Ontario and Quebec, the lands are divided into berths or limits of a certain number of square miles. The new limits are put up to auction and allotted to the highest bidder, that is the one who offers the largest bonus for cutting the timber over the limit; he has further to pay a small annual rental per square mile, and a due per cubic foot of squared timber, and one on every saw log. The lease is only for one year, but practically the lumbermen are never disturbed so long as they pay their rents and dues.

We now proceed to give area, lumber cut and exported, revenue, number of saw mills, etc.

Nova Scotia.

The lumber area of this province is held by the agriculturists or landowners, consequently the Government has no control over the cutting, and derives no direct revenue from the lumber. There are 1,190 saw mills, in which 4,160 hands are employed. The value of the lumber exported during the fiscal year, ending June 30, 1885, was estimated at $1,274,653.

New Brunswick.

The lumber area under license in 1883, was 3,117 square miles and the total revenue derived therefrom $175,352. Number of saw mills 478. Number of hands employed therein 7,175. Value of lumber exported during the fiscal year 1884–1885, $3,269,381.

Prince Edward Island.

Lumber lands in the possession of private owners. Number of saw mills 165. Number of hands employed 419. Value of lumber exported $14,459.

Province of Quebec.

Lumber area under license 41,260 square miles. Revenue derived therefrom $660,757. Number of saw mills 1,729. Number of hands employed 12,461. Estimated value of lumber exported $8,798,094. The port of Quebec being the principal shipping one for lumber on the St. Lawrence, a very large proportion of the exports comes from the Province of Ontario.

Province of Ontario.

Lumber area under license in 1884, 18,000 square miles. Revenue derived therefrom $464,529. Number of saw mills 1,761. Number of hands employed 16,846. Estimated value of lumber exported $7,371,028. (Almost exclusively shipped to the United States.)

In the North-West Territories and British Columbia the lumber lands have not yet been surveyed and therefore no opinion can be given as to their prospective value, though it is assumed that the forest resources of the latter province are immense, and only await enterprise to render them productive both to the revenue and to the export trade.

The census returns for 1881 give the production of the forest for home use and export as follows:—

Cut.	1881.
Square pine, white, cubic feet	40,729,047
" " red, " "	2,815,755
" oak, " "	5,670,894
Tamarac, "	4,653,575
Birch and maple, "	4,414,795
Elm, "	3,181,968
Walnut, black, "	59,032
" soft, "	754,219
Hickery, "	387,619
All other timber, "	48,956,958
Pine logs*	22,324,407
Other "	26,025,584
Masts and spars	192,241

* The census log is that quality of wood capable of giving 100 feet superficies of lumber one inch thick.

XXI.

EDUCATION.

Two and a-half centuries have passed since the first school was established in Canada. It was opened in the village of Quebec, and its first pupils were a negro and an Indian boy. In 1678 Bishop Laval laid the foundations of the Seminary of Quebec. Ehis was in 1852 erected into the University of Laval by Royal Charter.

The common school systems of the several Provinces of Canada are all based upon the principle of Free Education, the funds being supplied by local assessments, supplemented by legislative grants. In the Provinces of Ontario, Quebec and Manitoba there are separate schools for Roman Catholics. In the other Provinces the schools are unsectarian.

The Province of Quebec owes its present development to the efforts of Dr. J. B. Meilleur, who was made chief Educational Officer for Lower Canada in 1837.

The Province of Gntario is indebted for its excellent system to the laborious evertions of Revd. Dr. Ryerson, who was appointed Chief Superintendent in 1884.

Nova Scotia under the zealous advocacy of Hon. C. Tupper (now Sir Charles, and High Commissioner for Canada in London,) placed its Public School Act on the Statute Book in 1865.

New Brunswick and Manitoba followed in 1871, British Columbia in 1872, and Prince Edward Island in 1877.

The number of pupils throughout the Dominion, in 1885, in the public schools, high schools and universities, inclusive of private schools was 968,193. The average attendance was 555,-405. The total expenditure for the year, not including school buildings, was $9,310,745, and the value of the school lands, buildings and furniture was $25,000,000.

According to the reports of the several Superintendents of Education there were nearly 18,000 teachers employed in the public schools.

From the census returns for 1881 it appears that in that year there were 274 boarding schools for young ladies and 13,064 pupils.

The extent to which the people of Canada tax themselves for Public School Education may be judged from the fact that in the

Province of Quebec out of the year's total expenditure of $3,162,416, only the sum of $353,677 was granted by the Provincial Legislature. In Ontario, of the total of $3,904,797, the amount granted by the Legislature of the Province was $267,084.

In Manitoba and the North West Territories where the public lands are under the control of the Federal Government, one of first acts of Parliament, after the acquisition of the region, was to set apart two out of every thirty-six sections of 640 each for school purposes.

XXII.

AGRICULTURE.

The great interest of Canada—that of Agriculture, is so well known and will be so fully set forth in the exhibits at South Kensington, that little need be said beyond what has already been said incidentally.

Under the guidance of Sir John Macdonald, who has for years directed public attention to the necessity for mixed farming, Canada has passed beyond the stage of a mere wheat-growing country and has developed her Agricultural industries in various directions. Greater attention has been given to stock-raising, to fruit-growing and to dairy products, as well as to the development of the varied industries of Canada.

Most important results have followed the efforts made to give proper direction to the public mind. These results show themselves in the much broader basis upon which the general industries of the country stand as compared with the United States.

An analysis of the domestic exports of the two countries gives the following results.

Table showing the relative proportions of the products of the named industries exported from Canada and from the United States in the year ended June 30th, 1885.

	Agricultural Products Including Animals.	Products Mine.	Products of Forest.	Fisheries.	Manufactures.
Canada	56.60	4.17	24.06	9.13	3.64
United States....	72.96	8.28	1.04	0.70	16.14

If we represent the export of the products of Canadian Mines at 1, Fisheries will stand at 2.2, Forest products at 5.8, Animals and their produce at 6.9, other Agricultural products at 3.9, Manufactures at 0.9, and Miscellaneous at 0.2.

The export value of Cheese and Butter in 1885 amounted to nearly $9,700,000, or about one-quarter of all the exports of the farm. The export of Cheese increased 78 millions pounds in 1885 over 1868.

On page 75 will be found a table showing the growth of the export trade in Beeves, Sheep and Hogs. In continuation of that table, the following will show the course of the export trade, 1st. in the products of animals and 2nd. in the export and import wheat and flour trade.

Table showing wheat and flour of wheat imports into and exports from the Dominion; estimated home production and surplus exported.

Year ending June 30.	IMPORTS.			Yield Estim'td.	Home Consumption Estim'td.	EXPORTS. Produce of Canada.			EXPORTS. Not Produce of Canada.			Total Prod. & not Prod.	Exports more or less than Imports.
	Wheat Bush.	Flour Brls.	Total Bush.	Bush.	Bush.	Wheat Bush.	Flour Brls.	Total Bush.	Wheat Bush.	Flour Brls.	Total Bush.		
1875	5,105,158	467,786	7,444,088	21,840,760	20,686,399	4,383,022	302,783	5,896,937	2,670,522	6,198	2,701,512	8,598,449	+ 1,154,361
1876	5,838,156	376,114	7,718,726	24,674,163	21,044,819	6,070,393	415,504	8,147,913	3,177,997	4,432	3,200,157	11,358,070	+ 3,629,344
1877	4,589,051	549,063	7,334,366	18,888,564	21,291,640	2,393,155	268,605	3,736,180	1,165,940	7,834	1,205,110	4,941,290	— 2,393,076
1878	5,635,411	314,520	7,208,011	25,501,955	21,814,498	4,393,535	476,431	6,765,690	4.115 708	2,814	4 129,778	10,895,468	+ 3,687,457
1879	4,768,733	315,044	6,343,953	28,617,228	22,339,746	6,610,724	574,947	9,485,459	3,156,821	5,829	3,185,976	12,671,435	+ 6,327,482
1880	7,521,594	113,035	8,086,769	29,556,103	22,705,252	5,090,505	544,591	7,813,460	7,078,988	16,893	7,163,453	14,976,913	+ 6,890,144
1881	7,339,689	236,434	8,521,854	25,936,827	22,818,779	2,523,673	439,728	4,722,313	6,568,606	61.727	6,877,231	11,599,544	+ 3,077,690
1882	2,931,220	200,716	3,934,800	27,996,552	22,932,837	3,845,035	469,739	6,193,730	2,588,498	38,381	2,780,403	8,974,133	+ 5,039,383
1883	4,954,174	301,455	5,014,465	28,896,338	23,047,526	5,867,458	489,046	5,965,267	4,866,077	37,294	4,873,536	10,838,803	+ 5,824,338
1884	3,604,442	565,277	3,717,498	22.547,951	23.162,763	745,526	197,339	785,004	2,275,662	87,115	2,293,085	3,078,089	— 639,409
1885	3,128,143	565,562	3,241,295	25,518,017	23,278,576	2,340,956	123,777	2,365,711	3,082,849	37,277	3,090,305	5,456,016	+ 2,214,721

Exports from Dominion of Canada—Produce of Canadian Farms.

Year Ended June 30.	Tons Fresh Meat.	Tons Pork & Beef.	Tons Pres'v'd Meats.	Tons Bacon & Hams.	Tons Lard.	Tons Cheese.	Tons Butter.	Horses, No.	Value Horses. $	Eggs Dozens.	Wool, lbs.	Hides. Horns, Pelts. $	Poultry. $
1874.....	.....	7,968	6	9,035	963	10,625	5,461	5,399	570,541	4,407,531	2,764,796	394,069	79,224
1875.....	.....	2,180	.....	4,448	151	14,439	4,137	4,382	460,672	3.521,068	2,647,498	365,795	49,787
1876.....	.....	2,096	.....	5,014	289	15,636	5,469	4,300	442,338	3,880,813	2,707,229	207,774	74 317
1877.....	.....	3,748	660	7,045	241	16 040	6,557	8,306	779.222	5,075,953	2,476,484	515,332	48,307
1878.....	172	2,700	549	4,325	118	16,989	5,807	14,179	1,273,738	5,262,920	2,445,893	394,562	67,148
1879.....	135	1,138	318	2,075	139	20,720	6,387	16,629	1,376,794	5,440,828	3,013.587	416,516	90,880
1880.....	45	881	550	4,372	222	18,378	8,310	21,393	1,880,379	6,452,580	3,698,439	760,594	141,034
1881.....	81	1,317	496	4,640	93	21,989	7,879	21,993	2,094,037	9,090,135	1,404,123	445,699	133,693
1882.....	149	882	604	4,388	60	22,678	6,768	20,920	2,326,636	10,499,082	1,053,305	386,229	149,804
1883.....	177	641	805	1,898	22	25,911	3,863	13 019	1,633.291	13,413,744	1,375,572	479,140	161,229
1884.....	182	471	804	3,601	59	27,830	3,198	11,595	1,617,829	11,490,855	1,501,031	464,038	192,908
1885.....	255	490	115	3,639	28	35,560	3,272	11,978	1,554,629	11,542,703	989,825	621,626	175,889

Considerable attention has been given to the application of science to farming.

The Province of Ontario has established an agricultural college, with a farm of 550 acres attached, utilized as follows:—College and ornamental grounds, 45 acres; garden, 5 acres; experimental grounds, 24 acres; orchard, 20 acres; under general cultivation, 324 acres; natural pasture, 60 acres; bush, 65 acres; roads, 7 acres. The number of students is 91. In the course of instruction, Agriculture occupies a prominent place in connection with lessons on live stock, dairying, arboriculture, chemistry, veterinary science, botany, entomology, book-keeping, etc. The full course covers a period of two years. No institutions in America can compete with the Ontario College in the variety and excellence of its stock.

Hon. Mr. Carling, Minister of Agriculture in the Federal Parliament, has, during the present session, brought into Parliament a plan for the further development of agriculture throughout the Dominion. His plan provides for one central station, situated near the federal capital, with not less than 400 acres of land; one sub-station for the provinces of Nova Scotia, New Brunswick and Prince Edward Island jointly; and one each for Manitoba, the North-West Territories and British Columbia. With the varying conditions of climate and soil necessarily associated with a stretch of territory covering 4,000 miles from ocean to ocean, all now accessible by rail, a station on the Atlantic, another on the Pacific, with three intermediate ones, are considered absolutely required.

The work which it is proposed should be undertaken by the staff may thus be summarised:—

(*a.*) Conduct researches and verify experiments designed to test the relative value, for all purposes, of different breeds of stock, and their adaptability to the varying climatic or other conditions which prevail in the several Provinces and in the North-West Territories;

(*b.*) Examine into scientific and economic questions involved in the production of butter and cheese.

(*c.*) Test the merits, hardiness and adaptability of new or untried varieties of wheat or other cereals, and of field-crops, grasses and forage plants, fruits, vegetables, plants and trees, and disseminate among persons engaged in farming, gardening

or fruit-growing, upon such conditions as are prescribed by the Minister of Agriculture, samples of such surplus products as are considered to be specially worthy of introduction;

(*d.*) Analyze fertilizers, whether natural or artificial, and conduct experiments with such fertilizers, in order to test their comparative value as applied to crops of different kinds;

(*e.*) Examine into the composition and digestibility of foods for domestic animals;

(*f.*) Conduct experiments in the planting of trees for timber and for shelter;

(*g.*) Examine into the diseases to which cultivated plants and trees are subject, and also into the ravages of destructive insects, and ascertain and test the most useful preventives and remedies to be used in each case;

(*h.*) Investigate the diseases to which domestic animals are subject;

(*i.*) Ascertain the vitality and purity of agricultural seeds; and

(*j.*) Conduct any other experiment and researches bearing upon the agricultural industry of Canada, which may be approved by the Minister of Agriculture.

XXIII.

THE MINERALS OF CANADA.

The mineral wealth of Canada is so great that an American authority, referring to it, says "to particularize the undeveloped wealth of this northern land would require volumes." As might be expected from her vast areas, covering a surface as large as Europe, and from her varied geological formations, Canada is marvellously rich in minerals; the chief of which, of economic importance, according to information derived from the reports of the Geological Survey, are classed as follows:—

1. Metals and their ores.
2. Minerals used in certain manufactures.
3. Minerals used in agriculture.
4. Minerals used as pigments.
5. Combustible and carbonaceous materials.
6. Refractory minerals.
7. Minerals applicable to building.
8. Minerals for grinding and polishing.
9. Minerals applicable to miscellaneous purposes.

Metals and their Ores.—Iron.—From Harrington's report, in connection with the Geological Survey, we learn that the iron ores of the Dominion have a wide range, both geographically and geologically. From Vancouver Island, on the west, to Cape Breton, on the east, they occur at varied intervals.

Sir William Fairbairn, in "Iron, its history, properties and processes of manufacture," says:—"In the Mineral and Geological Department of the Exhibition of 1862 were exhibited striking specimens of iron ore from the colonies, amongst which was the remarkable collection from Canada, consisting of oxide, red hematite and bog ores. The thickness of some of the beds from which the specimens were taken is worthy of notice. . . . In Nova Scotia, some of the richest ores yet discovered occur in boundless abundance. The iron manufactured from them is of the very best quality, and is equal to the finest Swedish metal."

Sir William Dawson on "The Iron and Coal of Nova Scotia, a Source of Wealth to the Dominion," says:—"It is a remark often made that the iron ores of Canada, rich and magnificent though they are, suffer in their practical value on account of their distance from the mineral fuel required in so great a quantity, whenever smelting processes are undertaken on a large scale. To a certain extent, better means of communication, and larger and more economical working, must remove this disadvantage. It should, however, be borne in mind that the great iron deposits of Nova Scotia, equal in extent and value to any others in the Dominion, are not so situated, but lie in close proximity to some of the greatest coal-fields in the world. . . . Even in Great Britain itself, the two great staples of mineral wealth are not in more enviable contiguity, and the iron ores of Great Britain are, in general, neither so rich nor so accessible as those of Nova Scotia."

Magnetic ores occur abundantly throughout several counties of Ontario. An important deposit in the township of South Crosby, known as the "Chaffey Mine," has been worked for years. It forms a bed 200 feet thick, and has been traced for a long distance. A very fine and valuable ore, free from any trace of pyrites, and with very little sulphur, exists as a large deposit in North Crosby. The contiguous townships of Madoc, Marmora, Belmont and Seymour contain several beds of magnetic iron ore

which have yielded excellent iron. The Blairton Mines, in the township of Belmont, consist of a succession of beds, interstratified with layers of slate and crystalline limestone, occupying a breadth of about 500 feet. The Seymour ore bed of Madoc, other mines in Bedford, Bathurst and South Sherbrooke, are all important deposits. In the region west of Lake Superior, the Province of Ontario has a country rich in iron ore.

In the Province of Quebec there are large and valuable deposits of magnetic ore. In the County of Beauce a bed of granular iron ors about two-thirds magnetic, with a vein forty-five wide, occurs in serpentine.

Great masses of iron ore exist on the coast of British Columbia—some of the finest ores known in Canada, lying in close proximity to great beds of marble or limestone, and to the coal fields of Nanaimo.

Dr. G. M. Dawson, of the Geological Survey, describes the bed on Texada Island as "a very rich magnetic ore, assaying 68.4 of iron and a very low percentage of phosphorus and other impurities, with only twenty miles of the navigable waters of the Straits of Georgia between it and the Comox coal field, and both the iron and coal close to the water's edge."

Hematite iron ores are found in all parts of Canada. Geologically, our hematites have a wide range in time. They are found in the Laurentian, Huronian, Lower and Upper Silurian, Devonian, Carboniferous and Trias formations. An important deposit in Ontario exists in the township of McNab. The bed is thirty feet thick, and an analysis of an average specimen gave 58.8 per cent. of pure iron. Large amounts of red hematite are met with in Lake Nipissing region, Madoc, Gros Cap, Lake Superior. One of the most valuable deposits in Quebec Province is near Hull, opposite Ottawa,—a specular ore, assaying from 64 to 68 per cent. of metallic iron.

In New Brunswick, large deposits of hematite ore are found near Woodstock, on the River St. John, and the iron produced is remarkable for its great hardness and strength. When converted into wrought iron, it is pronounced, on the authority of Sir William Fairbairn, to be specially suited for the plating of iron-clad war vessels. It is also admirably adapted for steel.

Titanic iron ores are found in different parts of Canada. Some of the ores in Quebec contain from 20 to 30 per cent. of titanic acid.

Limonite and bog ores are also widely distributed. In Nova Scotia, limonite of the brown hematite variety is found very pure near the East River in Pictou County, and the Londonderry deposits in Colchester County are among the largest and most extensively worked in the Dominion. The ore is of the best quality, and the average yield from smelting is over 50 per cent.

In Quebec, the bog ores exist largely at Vaudreuil, where the beds are from four to eight feet thick, and contain about 52 per cent. of iron.

Clay iron-stones are found in rocks of various ages in all the Provinces. Those of the Tertiary age occur in the lignite-bearing strata west of Red River. Of these, Mr. G. M. Dawson writes:— "Should these ores ever come to be worked, limestone for use as a flux could be obtained in considerable quanties from the boulders of Silurian age which strew the plains."

For fuller statements, reference may be made to Mr. Harrington's report in the Geological Reports of 1873-74, and to a work on the "Manufacture, Consumption and Production of Iron in Canada," by J. H. Bartlett, 1885.

From what has been said, it will be seen that Canada possesses inexhaustible supplies of rich ores of this precious metal, though, as yet, but very partially developed.

The imports into Canada for home consumption of iron, steel, rails, castings, cutlery, machinery, hardware, etc., since confederation, amount to $243,493,915, divided into three-year periods as follows:—

1868–70	1871–3	1874–6	1877–9	1880–2	1883–5
$22,170,672	$52,359,665	$52,917,570	$28,504,125	$40,754,029	$46,787,854

The export of iron, castings, machinery, steel and steel manufactures, the production of Canada, in 1885, was $296,122 and of iron ore $132,074.

For a country having 11,000 miles of railway, with a weight of over a million tons of rails; and possessing, for the manufacture of iron natural advantages, which few, if any, places in the world surpass, the development of Canada's iron industry is wonderfully slow.

To complete the statement we give the returns of the census:—

	No.	Capital invested.	Hands.	Value of Products.
Iron smelting furnaces and steel making in 1871	6	$492,000	624	$298,000
" " " " 1881	13	490,000	778	914,769

There appears to be a good field for skill, enterprise and capital in connection with our iron industry.

Other Metals.

The only ore of lead met with in Canada is the sulphuret or galena. At Thunder Bay and the Nepigon region to the north of Lake Superior, very numerous and valuable veins of ore are found.

Several veins occur in the Provinces of Ontario, Quebec, Nova Scotia and New Brunswick. In the Province of British Columbia, galena has been found in many places. It also appears in connection with gold, both in the lodes and superficial gravels of the Cariboo district.

Copper occurs in Canada in the forms of native, or metallic copper and of the sulphuretted ores. The former is confined principally to the rocks of the upper copper-bearing series on Lake Superior. The latter are widely diffused. In Ontario, on the northeastern shore of Lake Huron, extensive veins of rich copper ores have been mined for years, often with great profit. On Lake Superior, the native copper, which has been so extensively and profitably worked on the Michigan shore, also exists in large quantities over the Canadian shore.

In Quebec, and the other eastern provinces, deposits of copper have been found and, in many cases, mined.

In British Columbia, masses of native copper have been found in various parts of the province.

Very fine specimens of purple copper ore are found in the neighbourhood of Howe Sound and other localities.

In the Ohio district of Nova Scotia, an opening was made in 1884 on a deposit of yellow and grey copper ore, yielding 1,120 pounds of copper, $6\frac{2}{3}$ dwts. of gold and 3 oz. of silver to the ton.

Native silver occurs in large quantities at several points on Lake Superior, and the copper ores of the Province of Quebec contain small quantities of silver.

At Thunder Bay, on Lake Superior, silver in a native state has been discovered in many localities and several mines have produced large results.

In British Columbia, the best known argentiferous locality is that near Hope on the Fraser River. The lodes occur at an elevation of 5,000 feet. Specimens assayed have given high yields

of silver. In the interior of Cherry Creek, between Okanagan and Arrow Lakes is a locality from which specimens of remarkably rich silver ore have been brought.

Gold exists over a large extent of the Eastern Townships in Quebec, and has attracted labour and capital. It is also found in Ontario at Madoc and Marmora. Practically, however, its production is limited to the Provinces of Nova Scotia and British Columbia. In the former province gold occurs principally in quartz veins in stratified slate and quartz ore rocks along the Atlantic coast. According to the report of the Inspector of Mines, there were twenty-seven gold mines in operation in 1884, yielding from 25,186 tons of quartz 16,080 ounces of gold as the result of 118,087 days labour. In 1885 the yield was 21,000 ounces. Since 1862 the total number of ounces extracted has been 366,976 from 495,923 tons of quartz crushed.

In British Columbia gold has been found in paying quantities at various points along a northwest line for more than ten degrees of latitude. There is scarcely a stream of any importance in the province in which the colour of gold cannot be found.

In the official report it is stated as follows :—" In British Columbia a belt of rocks, probably corresponding to the gold rocks of California, has already been proved to be richly auriferous and it may reasonably be expected that the discovery and working of rich metalliferous deposits of other kinds will follow. Promising indications of many are already known. With a general similarity of topographical features in the disturbed belt of the west coast, a great uniformity in the lithological character of the rocks is found to follow, so that while a comparatively short distance from southwest to northeast may show considerable lithological change, great distances may be traversed from southeast to northwest and little difference noted. In British Columbia, so far as geological explorations have yet gone, they have tended to show a general resemblance of the rocks to those of the typical sections of California and the Western States."

According to returns it appears that since 1858 the yield of gold has been 2,562,000 ounces, which at $19 an ounce, is equal to $48,672,128, the amount given in the returns. This quantity has been mined under most disadvantageous conditions. Without railway communication supplies have necessarily been greatly increased in price by the cost of transport, thus deterring the miner from the prosecution of his work. All this is changed by

the completion of the Canadian Pacific, and gold mining in British Columbia will undoubtedly receive a powerful stimulus by reason of the more favourable circumstances under which it will henceforth be pursued.

Gold is also distributed at certain points on the east side of the Rockies, and has been met with in the branches of the Saskatchewan River from Edmonton to the Forks.

Antimony is found in the region west of Lake Superior, New Brunswick and Nova Scotia. The Inspector of Mines for the latter province, in his report for 1885, says:—"During the past year a valuable mine of antimony ore has been opened out at Rawdon, Hants county. The vein, which is of grey antimony ore, is from four to eighteen inches in width. An analysis showed the ore to be almost of chemical purity, having little beyond traces of foreign material."

According to the trade returns 717 tons were exported from this mine, in 1885.

Among other metals mentioned as having been found in Canada are nickel, cobalt, zinc, silver and platinum.

Of minerals used in certain chemical manufactures, Canada has Iron Pyrites, Chromium, Manganese, Titanium, Molybdenum and Magnesia.

Of minerals used in agriculture, Canada has Apatite, Gypsum, Marl, and Salt very widely spread.

In Ontario, phosphate of lime or apatite is found in large quantities all through the district north of Kingston and Belleville; on the line of the Rideau canal, near Perth, it extends over an area of many square miles.

The chief supply, however, is obtained from the deposits on the north side of the Ottawa river, in the region drained by the Lièvre and Gatineau rivers.

The trade returns for 1885 show that the exports of this article amounted to 18,984 tons, all of which went to Great Britain with the exception of 1,360 tons exported to Germany and 745 tons to the United States. During 1885 the production increased. New beds were discovered near the sources of the Lièvre and Gatineau, 150 miles from the mouth.

The Canadian Pacific Railway have constructed a branch line to facilitate the transportation of the products of the mines.

Gypsum is found in great abundance in Ontario. The outcrop extends from the Niagara river to Lake Huron for 150 miles. A

very large amount is annually raised and used as a fertilizer, or ground for cement and stucco.

In Quebec the supplies come mainly from the Magdalen Islands. Extensive and practically inexhaustible beds are found in New Brunswick and Nova Scotia.

Marl or carbonate of lime is found in many localities.

Salt was discovered in 1866 near the town of Goderich, Ontario. The borings go down through the limestones of the Onondaga and Guelph formations and two or three hundred feet of red and blue shales which carry rock salt as their base. The area is extensive, extending a distance of over 40 miles long by 7 or 8 wide. In 1881, 472,000 barrels of salt were produced in this region.

Among minerals used for pigments are iron ochres which are found and extensively manufactured in Quebec, and Ontario, and in smaller quantities in the eastern provinces.

Sulphate of barytes is also widely distributed.

We came next to combustible and carbonaceous materials.

The coal areas of Canada are estimated at 97,200 square miles, not including areas known, but as yet quite undeveloped, in the far North.

It is impossible to treat this important subject fully in the limits of a hand-book. The records of the Geological Survey, Sir William Dawson's "Acadian Geology" and other well-known publications must be consulted for details.

There are: 1st. The coal fields of Nova Scotia and New Brunswick; 2nd. Those of the North-West Territories; 3rd. Those of the Rocky Mountains; and 4th. Those of British Columbia.

1st. The coal areas of Nova Scotia and New Brunswick cover about 18,000 square miles. They are divided into the Cape Breton, Picton and Cumberland basins, all in Nova Scotia; New Brunswick containing, so far as known, no seams of sufficient magnitude to be successfully worked in competition with the Cumberland mines.

The total coal sales from these three basins, in which 196 pits are worked, have increased with considerable rapidity as the following statement will show:—

1785	to	1790,	tons	14,349	1841	to	1850,	tons	1,533,798
1791	"	1800,	"	51,048	1851	"	1860,	"	2,399,829
1801	"	1810,	"	70,452	1861	"	1870,	"	4,927,339
1811	"	1820,	"	91,527	1871	"	1880,	"	7,377,428
1821	"	1830,	"	140,820	1881	"	1885,	(5 yrs.)	6,099,016
1831	"	1840,	"	839,981					

It is worthy of note that the utilization of material which formerly went to waste has made great progress during recent years. The total sales of slack coal since 1877 have been as follows: 1877, 109,155 tons; 1878, 131,528; 1879, 113,719; 1880, 177,977; 1881, 209,011; 1882, 247,100; 1883, 281,105; and 1884, 316,132 tons. The sales of these coals to the United States have fallen from 404,252 tons in 1866, (the year before that country imposed a duty of $1.25 a ton) to 64,515 tons in 1884. The increased consumption is chiefly due to the increased demand in Canada for manufacturing and other purposes.

The seams in the Cape Breton basin vary in thickness, those at present worked being from four feet and a half to nine feet thick. The total available coal of the Cape Breton area is estimated at 800,000,000 tons.

In the Pictou coal field, the seams worked vary from six feet to 34 feet 7 inches in thickness. A purely conjectural estimate places the amount of available coal in this basin at 250,000,000 tons.

The Cumberland basin includes about 300 square miles. The principal seams, worked for any length of time, are four and six feet thick; other seams, more recently worked, are from 11 to 13 feet thick.

Taking one analysis from each coal field, we have as follows:—

	SYDNEY MINE C. BRETON.	ALBION MINE PICTOU.	SPRING HILL CUMBERLAND.
Moisture	3.04	1.29	1.40
Volatile Combustible	31.14	25.44	31.25
Fixed Carbon	61.50	61.55	61.58
Ash	4.32	10.25	5.76

There are no coal measures from New Brunswick westward, until the prairies of Manitoba and the North West Territories are reached. Of this coal basin, Dr. George M. Dawson, of the Geological Survey, in a letter dated 12th January 1866 to the Hon. John Carling, Minister of Agriculture, writes as follows:—

"The known area of true and lignite coals of the best quality, extends along the base of the Rocky Mountains from the 49th parallel to the vicinity of Peace River, a distance of 500 miles, with an average width of, say 100 miles, giving a total area of 50,000 square miles. It is not intended to affirm that the

whole of this area is continuously underlain by coal, but outcrops of coal are so general throughout it, that taken in connection with the character and regularity of the strata—it may safely be stated, that it is, throughout, a coal field. An additional area stretching eastward, as far as the Souris River and Turtle Mountains, yielding lignites only, but these often of very good quality, and well fitted for local uses, may be roughly estimated at 15,000 square miles."

In this last mentioned region analysis gives the following result:—

Water	15.46
Volatile combustible	37.97
Fixed carbon	41.21
Ash	5.36

Analysis of two or three coals from the first mentioned coal region of the North-West gives the following results:—

	Belly River	Bow River.	Peace River.
Water	6.52	12.37	2.10
Volatile combustible	31.03	32.33	21.54
Fixed carbon	56.54	46.39	71.63
Ash	5.91	8.91	4.73

The third coal area of Canada is that in the Rocky Mountains.

Of this Dr. G. M. Dawson writes:—"The areas within the Rocky Mountains, though small as measured by miles, contain much coal of the best quality. One of these areas, on the Bow and Cascade Rivers (crossed by the Canadian Pacific Railway) has been found to hold several good seams of anthracite of excellent quality."

The fourth area is that of the Pacific coast. The extent of this can be very roughly estimated, as no thorough examination has been made. Dr. Dawson gives the following estimate:—

Nanaimo coal basin (coals), approximately correct	200	square	miles.
Comox coal basin (coals), rough approximation	700	"	"
Queen Charlotte Islands and other areas of coal-bearing rocks (very rough approximation)	800	"	"
Tertiary lignite-bearing rocks in different parts of British Columbia, south of the 54th parallel of latitude (very rough approximation)	12,000	"	"

In quality the Vancouver Island bituminous coals are found to be superior for all practical purposes to any coals on the Pacific

coast. They rank in San Francisco with the West Hartley coals. These widely-spread coal deposits on Vancouver Island entitle the Province to be called the Britain of the North Pacific.

The output for 1885 was 357,548 tons, and the export 275,621 tons, almost the whole of which was shipped to the United States. The yield in 1874 was 81,000 tons.

In the Comox district the productive measures show ten seams of coal, with a total of 29 feet 3 inches, the thickest seam being 10 feet.

The character of the coal is evidenced by the following analysis :—

	Slow Coking.	Fast Coking.
Water	1.47	1.47
Volatile combustible	28.19	32.69
Fixed carbon	64.05	59.55
Ash	6.29	6.29

Anthracite in 6 and 3 feet seams, comparing favorably with that from Pennsylvannia, has been found in Queen Charlotte's Island.

Samples analyzed gave the following results :—

	Sample 1.	Sample 2.
Water	1.60	7.89
Volatile combustible	5.02	4.77
Fixed carbon	83.09	85.76
Ash	8.76	6.69
Sulphur	1.53	0.89

The positions occupied by the coal-fields of Canada are so advantageous that an enhanced value is given to them when regarded from an Imperial point of view. The Cape Breton coal basin opens out on a bold coast abounding in harbors, on the portion of the American continent nearest to the British Isles. The Pictou coal-field is close to the Imperial naval arsenal of Halifax, "the western sentinel of the Atlantic."

The Cumberland coal basin is close to the great port of St. John, New Brunswick. All three coal-fields are so situated that they render easy of maintenance the Intercolonial Railway, which connects the Provinces in the East with the St. Lawrence Provinces.

The coal-fields of the North-West will supply with fuel the future millions of people inhabiting that vast region.

The coal measures of British Columbia meet the wants of the Empire on the Pacific Ocean, as those of Nova Scotia do on the Atlantic, and Victoria stands in the same relation to the Pacific that Halifax does to the Atlantic.

Canada will present herself, in company with her sister colonies, at the Colonial and Indian Exhibition, able to show that she possesses this truly British mineral in great abundance, and in highly advantageous situations, and that she can add to the common stock a large proportion of the whole.

Besides coal, both bituminous and anthracite, Canada has petroleum widely diffused. In Ontario, according to the census returns of 1881, the production of crude petroleum for the year 1880 was 15,490,622 gallons, an increase over that of 1871 of 3,500,000 gallons. In Gaspé, in the Province of Quebec, it is found over a wide extent of country. The reports from the North-West show that it is found over a vast extent of that country.

Peat exists in large deposits in all parts of Canada.

Next in order we come to the refractory minerals. Canada has of these plumbago, mica, soapstone and sandstone.

The plumbago is a pure crystalline plumbago, and is widely distributed. One specimen exhibited weighs 3,000 pounds.

The others mentioned are also very generally found.

Materials for bricks, pottery and glass abound. Limestone, for common lime, is abundant, as also are argillaceous limestones and dolomites, yielding good hydraulic cements.

Grinding and polishing materials are found in all the Provinces.

Of building stones Canada possesses an abundance. Granite, comparing favorably with the best granites of Great Britain and New England is found in many localities. Sandstones of various textures and colors abound. The collection of marbles in the Geological Museum at Ottawa indicates a profusion of all kinds. Flagstones and roofing-slates, lithographic stones, etc., are abundant and of good quality.

Canada, as yet, has afforded but few gems. Agates, amethysts and jasper are found in the Lake Superior region and in other parts of Canada.

There are numerous mineral springs throughout Canada.

XXIV.

THE FISHERIES OF CANADA.

These are the largest in the world, embracing nearly 5,600 miles of sea coast, in addition to inland seas, innumerable lakes and a great number of rivers.

With regard to their value, statistics prove it to be fully in proportion to their extent. The products of our fisheries, exported and sold on the Dominion markets in 1885, amounted to $17,722,973; but this by no means represents the value of the total catch, for in Canada the home consumption is very great—100 pounds per inhabitant being calculated to 30 pounds in England. As the fisheries extend throughout the length and breadth of the Dominion, almost every settler is afforded an opportunity for catching fish for domestic use. This renders it impossible to give full returns of the whole catch. It is approximately estimated that the value of the home consumption last year was $13,000,000, giving a total of $31,000,000 as the yield from less than half of the Canadian fisheries, exclusive of the catch by foreign fishermen.

The sea fisheries are well nigh inexhaustible—a fact attributable to the fishes' food supply being brought down by the Arctic currents from the northern seas and rivers. This consists of living slime, formed of myriads of minute creatures which swarm in the Arctic seas and are deposited in vast and ever renewed quantities upon the fishing grounds.

Salt water fishes of nearly every variety are to be found along the Canadian coasts, but the marine fisheries of greatest commercial importance are the cod, herring, mackerel, lobster and seal.

The fresh water fisheries are also of great importance, the immense lakes and rivers supplying an abundance of fish of great commercial value, both for home consumption and export, besides providing sportsmen with some of the finest salmon and trout fishing to be found anywhere. Salmon abound in a great many of the Canadian rivers.

OFFICIAL VALUATION OF THE YIELD OF THE FISHERIES BY PROVINCES :—

PROVINCE.	1876.	1885.
Nova Scotia	$6,029,037	$8,283,923
New Brunswick	1,953,496	4,005,430
Prince Edward Island	494,966	1,293,430
British Columbia	104,697	1,078,038
Quebec	2,097,664	1,719,460
Ontario	437,229	1,342,692
Total	$11,117,089	$17,722,972

The values of the yield of some of the principal fish in 1885 are: Cod, $4,536,732; Herring, $2,475,118; Lobsters, $2,613,731; Salmon, $1,152,348; Mackerel, $1,509,424; Haddock, $651,088; Trout, $474,932; Sardines, $355,731; Whitefish, $286,955.

THE DESTINATION AND VALUE OF CANADIAN FISH EXPORTS FOR 1876 AND 1885.

NAME OF COUNTRY.	1876.	1885.
United States	1,475,330	3,560,731
British West Indies	1,348,637	1,152,868
Spanish West Indies	825,287	718,956
Great Britain	687,312	1,543,731
South America	297,609	295,647
French West Indies	239,724	130,235
British Guiana	190,661	97,438
Italy	139,387	132,507
Hayti	90,999	2,907
Danish West Indies	52,988	38,263
Portugal	51,836	125,416
Newfoundland	50,299	14,946
France	.....	32,350
Australia	16,492	81,193
Madeira	14,960	10,203
Gibraltar	.....	11,740
Other countries	19,700	10,870
Total	$5,501,221	$7,960,001

Much attention has of late years been given to the development of the fisheries. The Federal Government has granted a yearly sum of $150,000 as a bounty, to be divided according to catch, among the vessels and boats engaged in the prosecution of

the sea fisheries. One result has been an increase in the number, and a great improvement in the build and outfit, of fishing vessels.

It has also provided fish-breeding establishments, of which there are twelve, in different parts of the Dominion, and millions of fish are yearly hatched and placed in the rivers and lakes. Large sums of money have also been expended in harbour improvements and breakwaters. The principal fishing stations in the Gulf of St. Lawrence have been connected with each other by land telegraphs and cables, by which means information is promptly given of fish "strikes" at any particular point, thereby saving the fishermen days and nights of fruitless exposure and cold.

The numbers of men, vessels, boats and fathoms of nets employed in the fisheries are as follows:—

STATEMENT SHOWING THE NUMBER OF VESSELS, BOATS, MEN ENGAGED IN FISHING, WITH THE QUANTITY OF NETS USED, FOR THE YEAR 1885.

PROVINCES.	MEN.	VESSELS.			BOATS.		NETS.	
	No.	No.	Ton'ge.	Value.	No.	Value.	No. of Fath'ms.	Value.
				$		$		$
Nova Scotia..	29,905	711	31,285	1,428,308	12,693	316,677	1,475,913	566,550
N. Brunsw'k.	10,185	196	3,297	78,836	4,879	147,567	430,733	241,360
P. E. Island..	3,535	53	2,044	55,900	1,039	34,625	47,985	24,649
Quebec	11,322	160	8,734	340,679	7,949	187,330	207,268	160,423
Ontario	2,716	23	2,523	63,310	1,045	121,863	710,630	96,222
B. Columbia.	1,830	34	845	54,600	867	44,195	141,850	130,080
Totals....	59,493	1,177	48,728	2,021,633	28,472	$852,257	3,014,384	1,219,284

These figures show an increase over those of 1875, of 6,309 in the number of men employed; of 3,561 in the tonnage of vessels; of 6,262 in the number of boats, and of $558,010 in the total value of vessels, boats and nets.

Including weirs and other fishing materials, the total value of the fishing "plant" in 1885 was $6,697,460.

XXV.

SHIPPING OF CANADA.

Number of vessels and tons on the Registry Books of the Dominion on the 31st December in each year; also number and tonnage of these being steamers.

	No. of Vessels.	No. of tons.	New vessels built and registered.		No. of Steamers.	Gross tonnage steamers.
			No.	Tons.		
1873	6,783	1,073,718	.....	.....	554	92,298
1874	6,930	1,158,363	496	190,756	595	102,138
1875	6,952	1,205,565	480	151,012	661	113,115
1876	7,192	1,260,893	420	130,901	689	111,953
1877	7,362	1,310,468	432	120,928	.....	.....
1878	7,469	1,333,015	340	101,506	771	155,064
1879	7,471	1,332,093	265	74,227	775	155,631
1880	7,377	1,311,218	271	65,441	797	158,863
1881	7,394	1,310,896	336	74,060	821	162,928
1882	7,312	1,260,777	289	61,142	783	160,859
1883	7,374	1,267,394	374	74,090	843	152,216
1884	7,254	1,253,747	387	72,411	1,073	207,669
1885	7,315	1,231,856	340	43,179	1,181	212,870

Summary by Provinces.

1885.

PROVINCES.	No. of Vessels.	No. of Steamers.	Gross tonnage Steamers.	Total net tonnage.
Nova Scotia.....	2,988	76	9,291	541,832
New Brunswick....	1,060	76	10,383	288,589
Quebec.....	1,631	328	89,845	203,635
Ontario.....	1,223	526	81,063	144,487
P. E. Island.....	227	12	3,055	36,040
British Columbia...	123	74	13,872	11,834
Manitoba.....	63	39	5,061	5,439
Total.....	7,315	1,181	212,570	1,231,856

Assuming the average value to be $30 per ton, the value of the registered tonnage of Canada on the 31st December last would be $36,955,680.

XXVI.

PRICES IN CANADA.

The following table shows the average rates of wages in Montreal and in Toronto for the year 1885 :

Employment.	Montreal Wages.		Toronto Wages.	
	From	To	From	To
	$ c.	$ c.	$ c.	$ c.
Farm labourers, per day, without board	1 00	1 25	1 00	1 25
do per month and board	12 00	15 00	12 00	14 00
Female farm servants, per month, with board	5 00	10 00	5 00	10 00
Masons, per day, without board	1 50	2 00	2 00	2 50
Bricklayers do	1 50	2 50	2 50	3 00
Carpenters do	1 50	2 00	1 75	2 00
Lumbermen, per month, with board	15 00	20 00	15 00	20 00
Shipwrights, per day, without board	1 50	2 00	1 75	2 00
Smiths do	1 50	1 75	1 50	2 25
Wheelwrights do	1 25	1 50	1 50	2 00
Gardeners, per month, with board	15 00	20 00	15 00	20 00
do per day, without board	1 00	1 25	1 25	1 50
Female cooks, per month	8 00	10 00	9 00	12 00
Laundresses, per day	0 75	1 00	0 75	1 00
Female domestics, per month	5 00	10 00	6 00	8 00
General labourers, per day, without board	1 00	1 25	1 25	1 50
Miners, per day	1 50	2 00	1 00	2 00
Mill hands, per day	1 00	1 50	1 00	
Engine drivers, per day	1 75	2 50	.....	.....
Saddlers, per day	1 50	2 00	1 25	2 00
Bootmakers, per day	1 25	2 00	1 25	2 00
Tailors, per day	1 00	2 00	1 25	2 00

The cost of articles of daily consumption by the working classes of Canada in the older provinces, is as follows :

Provisions, Clothing, &c.

	$ c. $ c.		$ c. $ c.
Bread, best white, 4 lbs.	0.11 @ 0.12	Soap, yellow, per lb.	0. 3 @ 0. 5
Butter, packed, per lb.	0.13 @ 0.15	Sugar, brown, per lb.	0. 5 @ 0. 6
do fresh, per lb	0.15 @ 0.20	Salt, per bushel	.... 0.25
Beef, per quarter	0. 6 @ 0. 8	Tea, black, per lb	....@ 0.30
do per lb	0. 8 @ 0.12	do green, do	....@ 0.30
Veal, per carcase, 5c @ 7c; per lb.	0. 9 @ 0.10	Tobacco, per lb	0.25 @ 0.45
Bacon, per lb	0.10 @ 0.14		
Beer, per quart	.... 0 10	Factory Cotton, 30 inches	0. 3 @ 0. 4
Candles, per lb.	0. 9 @ 0.10	do do 36 inches	0. 4 @ 0. 9
Coal Oil, per gallon	.... 0.20	Cotton, white	0. 5 @ .12½
Cheese, per lb.	0.10 @ 0.15	Coats, under, tweed	4.00 @ 8.00
Coffee	0.25 @ 0.30	do over do	7.00 @ 9.00
Cornmeal, per 100 lbs	2.00 @ 2.50	Trousers	2.50 @ 4.50
Coal	4.50 @ 6.00	Shirts, flannel	1.25 @ 2.00
Ducks, per pair	0.50 @ 0.60	do cotton	0.50 @ 1.00
Eggs, per dozen	0.10 @ 0.15	do underwear, all wool	0.65 @ 0.90
Flour, per 100 lbs	2.50 @ 2.70	Drawers, woollenwear	.... 0.75
do buckwheat, per 100 lbs	.... 2.50	Hats, felt	1.00 @ 2.00
Fish, dry or green cod, per cwt.	5.00 @ 6.00	Socks, worsted	0.15 @ 0.25
Firewood, per cord, from	2.50 @ 5.00	do cotton	0.10 @ 0.12
Geese, each	0.50 @ 0.60	Blankets, per pair	2.00 @ 5.00
Ham, sugar cured, per lb.	0.10 @ 0.15	Flannel, per yard	0.15 @ 0.50
do shoulders, per lb	0. 8 @ 0.10	Cotton Shirting, per yd.	0.08 @ 0.15
Herrings, per barrel	4.00 @ 4.50	Sheeting, per yard	0.08 @ 0.15
Milk, per quart	0. 4 @ 0. 6	Canadian cloth, per yd.	0.37 @ 0.75
Mutton, per carcase	0. 5 @ 0. 8	Shoes, men's	1.50 @ 2.50
do per lb	0. 8 @ 0.10	do women's	1.25 @ 1.75
Oatmeal, per 100 lbs	2.25 @ 2.50	Boots, men's	1.75 @ 2.50
Pork, per carcase	0. 5 @ 0. 8	do women's	1.25 @ 2.75
Potatoes, per bushel	0.30 @ 0.40	India rubber overshoes, men's,	.... 0.75
Rice, per lb.	.... 0. 5	do do do women's	.... 0.60

XXVII.

ANIMAL LIFE AND HUNTING GROUNDS.

Canada has long been looked upon as the sportsman's paradise, possessing as it does so large a share of indigenous animals. The stringent game laws of the old world are modified here, such laws of the kind as do exist having reference chiefly to the "close," or breeding season. Game here is common property; it affords food for the settler, sport for the disciple of St. Hubert, and the hunter and trapper each find pecuniary profit in its pursuit.

Wild beasts, or beasts of prey, such as panthers, wolves, and bears, although formerly abundant, are now rarely to be found, except in the depths of the great Northern forests, or in the fastnesses of the mountain ranges. In the almost untrodden depths of the Rocky Mountains and the Selkirk range in the Far West, abundant trophies of the chase can yet be obtained by the adventurous sportsman who may turn his steps in that direction.

The waters of Canada teem with wild fowl in the spring and autumn, especially during the latter season, when migrating to winter quarters in the South; and, as to the finny tribe, nowhere else on the American side of the Atlantic, can such fishing be had as the various provinces of the Dominion afford.

To present to view as concisely as possible the advantages Canada offers to the sportsman, it will be well to give a description of the various kinds of animals and of the chief hunting grounds.

Of wild animals, then, there are the panther, wild cat, lynx, fox, wolf, bear, moose, cariboo, elk, deer, antelope, mountain goat, mountain sheep, musk ox, buffalo, squirrel, marmot, hare, rabbit, porcupine, raccoon and badger. Of fur-bearing animals, there are the fisher, sable, weasel, ermine, mink, wolverine, otter, skunk, beaver, and, on the sea coast, the seal.

Of feathered game, there are grouse (known here as partridge), prairie fowl, quail, geese, ducks, swans, brant, curlew, snipe, woodcock, plover, pigeon, cranes; whilst of hawks, eagles, owls, crows, and other carrion birds, there are many varieties. Of smaller birds, beautiful either in plumage or for song, there is a vast abundance during the summer, and the ornithologist may revel to his heart's content in collecting specimens of great beauty.

Of fish there are, in the bays and harbours of the coast, mackerel, herring, cod, haddock, halibut (a species of enormous turbot), hake, pollock, shad, smelt, and eels, whilst of shell-fish and lobsters there is an abundant supply. The rivers connecting with the sea on both the Atlantic and Pacific coasts contain splendid salmon, whilst the inland rivers and lakes abound with salmon trout, whitefish, maskinonge, pike, pike-perch or doré, perch, bass, sturgeon, and a variety of smaller fish, and all the mountain streams are alive with brook trout.

Reptile life is not largely developed in Canada, a fact due, probably, to the long period of cold weather prevalent, and, apart from rattlesnakes, which are now comparatively rare, there are no poisonous snakes of any consequence. Lizards are not numerous, and attain no great size, but frogs and toads are abundant. The *Menobranchus* of the great lakes, a peculiar water lizard with external gills, and a similar reptile, the *Siredon*, in the lakes of the North-West, are remarkable species of this class of animal life. Leeches infest the streams, especially in the North-West, where they cause much inconvenience to explorers, surveyors, and others who have to travel over swampy ground and through shallow pools.

Insect life is very abundant during the warm season, the butterflies being beautiful in colour, and the beetles remarkable for their markings and brilliant hues. The locust and grasshopper of the Far West, at certain recurring periods, swarm in such myriads as to be a terror to the district they invade. Bred for the most part in the arid central desert, as soon as they obtain their wings they take the course of the wind in their flight, and carry devastation on everything where they settle. Mosquitoes are the chief insect tormentors, but their attacks end with the dry heat of summer, although they are always present in damp places. A large fly, known as "the bulldog," is troublesome, but not abundant, and flying ants are apt to prove very annoying to the traveller over the Western plains.

Space is too limited to give more than a passing notice to the larger animals respectively, and the description is not written for scientific instruction, but simply for general information.

The American panther, cougar, or catamount, corresponds very nearly to the puma of South America. It was known to the early discoverers of the New World as the American lion,

and was formerly abundant, but is fast disappearing before civilization. It is now heard of only occasionally, and then only when an unusually severe winter deprives it of its prey and drives it out of the tangled swamps of the northern solitudes. It is a dangerous animal to encounter, and when pursued will take refuge in a tree, whence it is apt to spring upon the hunter or his dogs.

The wild cat and lynx are fast disappearing in the older provinces, but are common in the Far West, especially in the country bordering on the Peace River.

Foxes are abundant everywhere, the common, or red, fox being of little value, whilst the cross and silver foxes are highly prized, especially the latter. They are—can an Englishman credit it?—shot or trapped indiscriminately, but there are several well-organized hunt clubs in the Dominion, with their packs of hounds, which carry on the good old English sport. The kennels at Montreal are especially worthy of notice, and the sportsman paying them a visit is certain to receive a cordial welcome.

Wolves in the older provinces are only found on the outskirts of settlement, but unless met with in packs, in winter, they are great cowards. The grey wolf is a strong, powerful animal and very cunning. In the North-West they are found on the prairie, around the willow thickets and hiding in the long prairie dodging grass, but are abundant in the great northern forest, where deer are to be found. The prairie wolf, or coyotte, is a smaller animal, and very cowardly. It is common all through the prairie country, where it may be frequently seen in groups on a distant hill top, or heard around the camp at night. Its skin makes a useful addition to the settler's cabin and is also a handsome trophy when dressed as a rug.

Although bears are plentiful in many parts of Canada, they are seldom seen (being nocturnal in their habits) except by the hunters. The black bear, the commonest of the tribe, is perfectly harmless, and never attacks man, unless wounded. Its food consists of berries and larvæ of insects and ants; it plays havoc in a field of oats or grain when ripe, in which when feeding it is easily shot. Its skin is much sought after, and bear's meat is frequently exposed in our markets for sale in winter.

The grizzly bear makes his home in the Rocky Mountains, whence he sallies forth on the plains and is the most ferocious

and dangerous of his tribe, being possessed of amazing strength and activity, attaining a weight when full grown of from 700 to 800 pounds. It is unable to climb trees like other bears, and when pursued turns and shows a most determined fight. Great skill is required in the pursuit of this animal, but the danger of the chase renders the sport most exciting. There is a species of bear met with in the barren grounds of the North-West and in the Peace River district known as the Cinnamon bear, very similar to the black bear in habits and size. It is comparatively rare.

The deer family include the most important of our large game animals, of which the Moose is by far the largest, standing as high as a horse. Although becoming more scarce every year, it is yet to be found in the back woods of the older provinces, in sufficient numbers to afford the sportsman all the excitement he wants. Hunting moose is an art, as the long snout and ears of this animal give it most acute powers of hearing and a very fine sense of smell. Its gigantic horns are well known and in constant demand, and its flesh is considered a great delicacy.

The Elk, Stag, or Wapiti, formerly distributed all over Canada, is now extinct in the older provinces, but is found in Southern Manitoba and is yet abundant in the Peace River district, but is fast disappearing with the advance of civilization. Its fine branching horns make a splendid trophy, but they prove a most formidable weapon of defence when the animal is brought to bay.

The Red Deer is abundant, except in old settled districts where no forests are left, and its pursuit affords great sport to the huntsman in autumn. Indiscriminate slaughter, till within the last few years, threatened its extermination, but stringent laws for the observance of the close season are making the deer more plentiful.

The Black-tailed, or Mule deer, is met with in the bush country of the North-West, but is rare and difficult of access.

Deer-shooting in season can be had in almost any part of Canada, provided guides are procured.

The Cariboo, or reindeer, is the fleetest, wildest and most shy of all the deer tribe.

The woodland Cariboo is abundant in Labrador and may be found in considerable numbers in New Brunswick. In the adjoining province of Nova Scotia, their numbers are gradually decreasing, their stronghold now being confined to the Cobequid Mountains and the uplands of Cape Breton. Proceeding west-

wards, it is found in Gaspé and the south-western portions of Quebec, and in the northern districts back of the Ottawa and St. Lawrence rivers, whence it ranges as far as the southern limits of Hudson Bay, where it is succeeded by another species known as the barren ground reindeer, or cariboo. This is a smaller animal, seldom exceeding 150 pounds in weight, whilst large specimens of the woodland cariboo weigh upwards of 400 pounds.

The Mountain Goat is common in the Rocky Mountains above the tree line, but as winter sets in, it comes down to the lower grounds. Its long white wool is silky and beautiful. Professor Macoun speaks of them as being numerous on Mount Selwyn, and agile in jumping from crag to crag. In Bow River Pass they are abundant. This animal must be stalked with great caution, its habits being much like those of the chamois in Switzerland.

The American big-horn, or Rocky Mountain sheep, is confined entirely to the mountain ranges of the far West, where it dwells secure amongst the high cliffs, leaping unscathed from crag to crag. It is exceedingly wary and difficult of approach, and has to be stalked with even more precaution than the stag. The horns on the male are so large at the base that they cover all the upper portion of the head down nearly to a level with the eyes, and the skull is exceedingly strong. The horns and head not unfrequently weigh over 50 pounds.

The Antelope is the fleetest of all Canadian mammals, and when at rest is beautiful and gracefully statuesque. It is essentially a dweller in the open country and is rapidly disappearing before the advance of settlement. It can easily outrun a horse, but after running some time it will stop suddenly and, if the hunter hides, it will return and fall an easy prey. It is sometimes hunted with greyhounds, but more frequently stalked. Great caution and patience are required, as its eyesight is so keen that all the sportman's care is needed to approach it.

The Musk ox i s found only in the northern part of the Dominion, stretching from the waters of North Hudson's Bay to the Arctic Ocean. It is the size of a small ox, has very short legs, and yet, is fleet of foot. Its fleece may almost be called double, with long surface hair, under which is close and fine wool. As a robe, the musk ox skin is preferable to that of the buffalo, of which, owing to their increasing scarcity, it is rapidly taking the place.

The Bison, or Buffalo, in former times, was met with from the

eastern boundary of Manitoba to the Rocky Mountains, and from the international boundary to Peace River. Before the advent of the white man, it roamed in countless thousands over the western plains, but to-day it is nearly extinct and is so exceedingly scarce everywhere that it is doubtful if the closest protection can ever bring it back in any abundance. Like the Indian, it retreats before civilization, and the shrill whistle of the locomotive, shrieking across the prairie, has sounded the death-knell of the large game of the West.

Of smaller animals, the sportsman can always find abundance. In the older provinces, squirrel-shooting affords considerable sport, the black and the grey species being there in good condition.

Rabbits are also abundant everywhere; but, unlike the English rabbit, they do not burrow, lying hid under logs and stumps or in rank herbage whence they are started by dogs. In winter they change their grey coat to one of white fur, corresponding with the snow. This animal is really a hare in its habits, but only the size of an English rabbit. The country, especially in the North-West, seems alive with them in some years, while in others they are scarcely seen.

On the western plains and near the Rocky Mountains, the prairie hare, or jack-rabbit, is found, corresponding closely to the English hare and about the same size.

In the older provinces, the Raccoon, which was once very abundant, is now scarce, and were it not for its nocturnal habits, would long ago have become almost extinct. 'Coon hunting with dogs, on a moonlight night, on the edge of a grain field, where these animals resort to feed, affords great sport.

Of the marmot tribe, the ground hog is abundant on the edges of clearings, and on the prairies, gopher and prairie dogs are very common. The holes made by the latter are a source of annoyance to the rider, often causing as much inconvenience as those of the badger.

The latter is only met with in the far West, and is unknown in the old provinces. It is very shy, but at the same time inquisitive, peeping out of its hole, in which it takes refuge, to ascertain the cause of its fright.

Porcupines are an enlarged species of the English hedgehog, are met with, more or less, everywhere in warm slopes and thickets, and like their English congeners are slow in their movements.

The fur-bearing animals are generally regarded as the peculiar property of the trappers and Indians, and although steadily sought after, are yet more or less abundant.

The Wolverine is scarce and rapidly disappearing. Its skin is a handsome trophy, the animal being the size of a large dog.

The Beaver is only to be found far from man's improvements, but, in the Peace River district, they are yet to be found in colonies, and their dams are stated by explorers through that part of the country to be the cause of the excessive floods that occur there. Many small lakes owe their existence to these dams.

Closely allied to the beaver but widely different in their habits are the musk-rats, common in all ponds, marshes and rivers from one end of Canada to the other. A very large business is done in musk-rat skins and, although persistently hunted and trapped, its great fecundity saves the race from extinction.

The above short sketch of the mammals has been given, as the larger animals generally are more enquired after than small game. To enumerate the feathered or finny tribe, would fill a volume, but it may safely be averred that no country offers a greater variety of ducks than Canada.

Swans breed only in the far North, and are seen only when migrating.

The goose breeds on the northern lakes. Teal are abundant. Bitterns are common along the grassy marshes and sedgy banks of the rivers. Heron are not uncommon, and in Manitoba and the North-West, pelicans are abundant. Of the grouse, plover, woodcock, snipe and smaller game, due mention will be made in describing presently the hunting grounds of the various provinces.

The same remarks apply to the fish of the Dominion, their name being legion, and every river, lake and pool teems with some kind or another which will afford sport either to the troller, fly-fisher or angler.

The hunting grounds of the various provinces may now be shortly treated of respectively.

Nova Scotia is more celebrated for moose and salmon than the other kinds of game that are found in the sister provinces. Moose are plentiful although constantly hunted, and afford rare sport for British officers quartered at Halifax. The neighbourhood of the chain of lakes between Annapolis and Liverpool, and the Petite and the Garden rivers is claimed as one of the best hunt-

ing grounds, whilst the Indian guides, necessary for the full enjoyment of sport, know all other likely grounds. Cariboo are found in the Cobequid Mountain district. Grouse are plentiful all through the province, but the finest shooting is woodcock, which are found in great numbers. Snipe are tolerably abundant and salmon, abound in all the rivers, whilst the number of trout will surprise the fisherman unaccustomed to Canadian streams.

The principal attractions of New Brunswick for the sportsman are moose, cariboo, salmon and the St. Croix trout or land-locked salmon. Moose are not nearly as abundant as in former years, and can only be found by parties visiting the province, enlisting an old hunter in their cause. The great Tantamar marsh in the south-eastern part of the province has the reputation of being a splendid snipe ground, while the Restigouche is equally celebrated for the quantity of wild fowl, especially geese, that visit it.

The fishing in the New Brunswick rivers is especially good. The Nipisiguit. Miramichi, Restigouche, St. John, and others afford the salmon fisher glorious sport—a pilgrimage to the Restigouche would afford sufficient material to keep his memory busy for years to come. A well-known American sportsman writes that "the northern countries of the Province that border "on the Bay of Chaleur, afford unquestionably the best field for "sportsmen to be found in America, east of the Rocky Mount-"ains." In the St. Croix and its splendid chain of lakes, trout abound, and are of a kind peculiar to it, known as "land-locked salmon." Whether in reality a different species, or a degenerated salmon is an open question, but they are very gamey, afford first-rate sport, and are excellent eating. Easy of access, and in a beautiful region of the country, St. Croix is a favourite with tourists.

The Province of Quebec affords excellent shooting in many parts; swans, geese, ducks, grouse, woodcock and snipe, moose, cariboo, salmon, and trout are found in abundance in their several localities. The chase of the two former is only pursued during the winter, is hardy and exhilirating, but real, downright hard work, and repays the toil. In the rivers emptying into the River and Gulf of St. Lawrence, the lordly salmon is to be found, and the fly, or any other fishing is simply superb. In the River St. Lawrence are localities noted as the resort of wild swans, geese and ducks, snipe and plover, curlew and sea-fowl of every kind, whilst the forests all through the Province teem

with grouse, and the woodland openings and swampy thickets harbour countless woodcock in their season. The large amount of unsettled country in this Province tends to keep up the abundance of game, in which the more settled portions of Canada are deficient.

The Province of Ontario is of such an extent, and so varied in its different districts that what applies to one portion is perhaps the opposite of another. Where settlement has advanced, game has disappeared before it, bnt there are large tracts of country yet remaining clothed with the virgin forest, only visited by the lumberman, in which game of all kinds abounds. The Ottawa district is yet one of these, as well as Nipissing and Muskoka, although the Canadian Pacific Railway and its connecting lines are now opening these regions for settlement, and a few years hence may class them only as amongst the localities that once held game. Moose are met with on the Dumoine and Coulonge rivers, and in the backwoods of the head waters of the Ottawa river, whilst deer are plentiful; duck and grouse shooting is good, with a fair show of woodcock and snipe, and the waters teem with maskinonge, pickerel and bass. In all the rivers tributary to the Ottawa on its north shore, and in the lakes which lie scattered everywhere in its vicinity, trout are plentiful. In central Ontario, in the old Frontenac or Kingston district, there is still good sport to be had among the ducks, grouse and snipe, though not equal to former years. The country in its rear, being rocky or marshy, and unsuited for farming, still abounds with deer, and is a favourite hunting ground, especially along the Opeongo and Hastings section. At the Thousand Islands, a long stretch of the St. Lawrence river, unsurpassed for beauty, and a favourite summer resort, splendid trolling is afforded for bass and maskinonge, to say nothing of fishing for smaller fry. Rice Lake, in the rear of Cobourg, and the neighboring lakes are famous for maskinonge and bass and the innumerable quantity of wild ducks that resort there to feed upon the vast fields of wild rice which abound along those waters. The Holland marsh, between Toronto and Collingwood, is famous for snipe, plover, and duck. In its vicinity, in years gone by, was one of the famous pigeon roosts, or places where the wild pigeons flocked to breed in thousands, whence they made their daily incursions into the surrounding country for food. This has, however, disappeared,

though stragglers occasionally return to the roost, but the mighty flocks of pigeons are a thing of the past. In autumn these birds are to be found scattered in small flocks along the edges of clearings, feeding on grain fields, but their numbers are very limited and yearly becoming less. On Lake Erie, Long Point, and Point Pelee, the St. Clair flats, on the western boundary, and Baptiste Creek, are admirable ducking grounds. Long Point, averaging eight miles in breadth and projecting some twenty miles into the lake, with wide fringes of marsh on both sides, in which wild rice is the chief growth, is controlled by a club of sportsmen, who keep it strictly preserved, and thus have it well stocked with game. Quails have been introduced with grouse on the higher ground, and wild turkeys have, of late years, been introduced, which are thriving on the ridge of land running the length of the Point, crowned with oak, maple, cherry, elm, and chestnut trees, affording a splendid cover for this noble bird. The only localities in Canada, apart from this, where the wild turkey yet remains, are in the counties of Essex and Kent, and there they are rare. In the early days of settlement, the whole western peninsula of Ontario abounded with the turkey, and the peculiar growth of the woodlands there, comparatively free from underbrush, afforded magnificent sport. Proceeding northwards along Lake Huron, along whose shores curlew, plover, and water-fowl abound, the Manitoulin Islands still afford good shooting and fishing in the waters round them. At the Straits of Mackinaw and Sault St. Marie, splendid fishing can be had, the salmon trout of Lakes Huron and Superior attaining a very large size, whilst all the rivers running into the Georgian Bay and Lake Superior teem with trout and are a favourite resort. Wherever the country is in a state of nature, the sportsman must rough it and live under canvas, laying in before he starts his necessary camp furniture and provisions. All along Lake Superior, the rivers and streams running into it, especially the Nepigon, are a paradise for trout fishermen, and seem still to possess as many fish as when first discovered. Bears, deer, and an occasional wolf may here be killed, whilst the larder can be kept well supplied with feathered game.

In Manitoba, within a few miles west of Winnipeg, prairie fowl are to be found scattered in all directions, in numbers sufficient to satisfy any sportsman, whilst in autumn, ducks and

waterfowl literally cover every pond and lake. Successive flocks of these keep sport alive. First, in August, the grey duck and merganser make their appearance, succeeded in September by sea-ducks of every description, and, during these months, geese, ducks, and prairie fowls take to the stubble fields, where civilization has reached, and are easily shot. Professor Macoun states that about forty species of game birds are to be seen on the prairie at that season. In Southern Manitoba, the elk is yet found in the neighbourhood of Moose Mountain (wrongly named), for the moose frequents the country further north, lying between Lakes Manitoba and Winnipeg, and the country west of Lake Manitoba. In the latter, as well as in the waters of Winnipeg, there are large quantities of whitefish of a very large size and superior quality, and sturgeon of an enormous size are found there, and in the Saskatchewan, and Red rivers. In all the mountain streams of the North-West, which unite to form the South Saskatchewan, there are multitudes of beautiful trout, with salmon-coloured flesh. To the sportsman and the lover of the picturesque there is no place in that portion of Canada that holds out inducements equal to those to be found in the Bow River district. Hunting or fishing, as he turns his gaze to the west, he will see towering up to the skies, peak over peak, the everlasting hills. Should the mountains become tiresome, he has only to turn to the east and look over the swelling prairie, until in the distance the grassy mounds melt into the limitless horizon. The Peace River district is a great resort for bear, both black and grizzly, and there is abundance of the larger game also, elk, moose, and deer. All its lakes teem with fish of the very best quality; geese and ducks during their migrations are in countless thousands, an evidence of which is given in the fact of many thousand geese being killed and preserved for winter use every autumn at the Hudson Bay post, Fort Chippewayan. At the same place, no less than 25,000 whitefish are dried every year for winter use, such as are not required as rations for the men, being fed to the train dogs. The country here is described as park-like, the undulating plains being dotted with groves of trees.

Within the Rocky Mountains, besides fishing, hunting the Bighorn and the Rocky Mountain goat will give exciting sport. In spring and summer the males form separate bands of from three

to twenty, and feed along the edges of glaciers, or rest among the castle-like crags of the high summits. Whether quietly feeding or scaling the wild cliffs, their noble forms and the beauty of their movements never fail to strike the beholder with lively admiration. In the months of November and December, all flock together, male and female, old and young. Wary in the extreme, they are most difficult to approach, and it is only by exercising all the stratagems of a hunter that a shot can be fired at them. Man's incursions in the mountains are making these animals more wary every year, and were it not for the inaccessible places they are able to scale, and the giddy heights they fearlessly tread, where men cannot follow, their days would be soon numbered and they would become like the buffalo, an animal of history.

In British Columbia, the general aspect of the country naturally impresses the sportman that it is a land abounding with game. The rugged mountain ranges are wooded on their slopes and have in their embrace, lakes, swamps and natural meadows ; lakes of all sizes, from the little pond to the body of crystal-like water 100 miles long, often linked by streams, lake after lake turning and twisting to find an outlet to the ocean, generally through one or other of the larger rivers of the province, all abounding with fish. On the low lands and near the coast in the winter the black-tail deer is numerous. This animal frequents the dense coniferous forests of the Pacific coast, delighting in their dark and damp recesses. It is seldom found far from timber or from some thick covert into which it can retreat. To the northward, where it has been but little hunted as yet, it comes down frequently to the salt water to feed on a species of sea weed cast up on the shore, and the Indians kill many, so feeding, by stealing up within shot in their light canoes. Deer are abundant on the islands and among the mountains of this coast, but there are great areas of territory where owing to the thick and tangled character of the undergrowth, stalking is out of the question, because of the impossibility of noiseless progress through the thickets. The elk is abundant on the coast line of the mainland, especially east of the Cascade range. Grouse are found everywhere, both on the mainland and the island, frequenting the thick fern and the pine lands, the willow grouse much resembling the English partridge. Prairie fowl are plentiful in the valleys of the east Cascade region and occasionally the rare game bird, the large sage

hen or " cock of the plains," may be found above Osoyoos. Ducks, geese, snipe, and pigeon are everywhere, the mouth of the Fraser river especially being a great resort for wild-fowl. The valleys of the Thompson, Okonagon, and Cache Creek afford good sport for the rifle and the gun, and, in the mountain districts, bears may be had with the aid of a guide and experienced hunter. The Grizzly and Cinnamon bear, with wolves and lynx can be hunted, but the sport is by no means free from danger, and considerable roughing must be encountered by the hunter.

Salmon in British Columbia are far more numerous than in the Atlantic Provinces of the Dominion, coming up from the sea in millions: this is no exaggeration. Six species are said to exist in the waters of the Pacific Coast, four of which are excellent and of great commercial importance.

On the Fraser, the Skeena, and the Bass rivers, large canneries are located. Trout abound in all the lakes and streams, and white-fish are common in the lakes in the middle and Northern interior of the provinces. Smelts of two kind are abundant on the coast, and a delicate fish known as the " Candle fish," or Oolachan, is very abundant along the coast in spring.

In some portions of the province, the country is open and dotted with trees, much like an old world park, and a horseman can canter along at will without underbrush to impede his progress. Snow seldom falls to any depth, except in the mountains, and as a consequence, the game is not driven from its regular grounds, as in many of the other older provinces.

In conclusion, this remark applies universally; that with the advance of settlement, animal life retreats. The western plains, so lately thronged with bands of elk and antelopes and roamed over by countless herds of bison, are yearly required more and more for human pastures, instead of nature's feeding ground. Hills, valley, forest and meadow everywhere are alike coming under man's control, thereby rapidly pushing to the verge of extinction many species of animals which were formerly abundant. But for the true sportsmen, there is yet abundance of game, and the migrations of the wild fowl save them from the universal destruction which threatens quadrupedal life. Canada is easy of access, its hunting grounds are equal to any of those in Europe, and free to all, and for scenery and beauty of landscape, for the grandeur of its forests, the wild solitude of its mountains, and the placid waters of its inland lakes, it stands unrivalled in British America.

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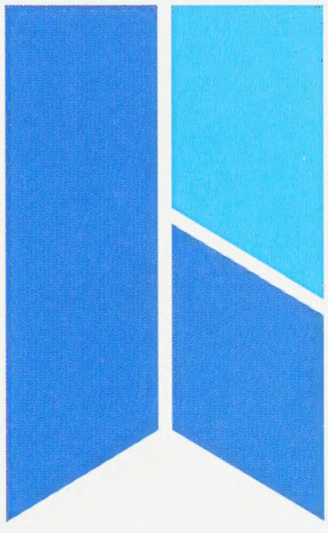

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